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SCHOOL OF MEDICINE

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THE JOHNS HOPKINS MEDICAL SCHOOL

ESTABLISHED BY THE JOHNS HOPKINS UNIVERSITY
IN CONNECTION WITH THE JOHNS HOPKINS HOSPITAL,
BALTIMORE, MARYLAND.

ANNOUNCEMENT FOR 1894-95

THE JOHNS HOPKINS PRESS
BALTIMORE
1894

TRUSTEES OF THE JOHNS HOPKINS UNIVERSITY.

C. Morton Stewart,
President.

Francis White,
Treasurer.

Lewis N. Hopkins,
Secretary.

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Lewis N. Hopkins,
Francis White,
James Carey Thomas,
C. Morton Stewart,
Joseph P. Elliott,
J. Hall Pleasants,
Alan P. Smith,
Robert Garrett,
James L. McLane,
W. Graham Bowdoin,
William T. Dixon,
The President of the University, *ex officio.*

*Deceased.

TRUSTEES OF THE JOHNS HOPKINS HOSPITAL.

William T. Dixon,
President.

Joseph P. Elliott,
Vice President.

Lewis N. Hopkins,
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Francis White,
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Charles J. M. Gwinn,*
Alan P. Smith,
Joseph P. Elliott,
George W. Corner,
James Carey,
C. Morton Stewart,
William T. Dixon,
John E. Hurst,
James L. McLane,
Charles F. Mayer.

* Deceased.

FACULTY.

The names are arranged in the several groups in the order in which the members of the staff assumed their duties.

PRESIDENT.

DANIEL C. GILMAN, LL. D.

A. B., Yale College, 1852, and A. M., 1855; LL. D., Harvard University, 1876, St. John's College, 1876, Columbia College, 1887, Yale University, 1889, and University of North Carolina, 1889; Professor in Yale College, 1863-72; President of the University of California, 1872-75.

PROFESSORS.

WILLIAM H. WELCH, M. D.

Professor of Pathology and Dean.

A. B., Yale College, 1870; M. D., College of Physicians and Surgeons (N. Y.), 1875; Professor of Pathological Anatomy and General Pathology in the Bellevue Hospital Medical College, N. Y., 1879-84; *Pathologist to the Johns Hopkins Hospital.*

IRA REMSEN, M. D., PH. D., LL. D.

Professor of Chemistry.

A. B., College of the City of New York, 1865; M. D., College of Physicians and Surgeons, N. Y., 1867; Ph. D., University of Göttingen, 1870; LL. D., Columbia College, 1893; Professor of Chemistry in Williams College, 1872-76, and previously Assistant in Chemistry in the University of Tübingen; *Editor of the American Chemical Journal.*

WILLIAM OSLER, M. D., F. R. C. P.

Professor of the Principles and Practice of Medicine.

M. D., McGill University, 1872; Fellow of the Royal College of Physicians, London; Professor of the Institutes of Medicine, McGill University, Montreal, 1874-1884; Professor of Clinical Medicine, University of Pennsylvania, 1884-89; *Physician in Chief to the Johns Hopkins Hospital.*

HENRY M. HURD, M. D.

Professor of Psychiatry.

A. B., University of Michigan, 1863, and A. M., 1870; M. D., University of Michigan, 1866; Superintendent of the Eastern Michigan Asylum, 1878-89; *Superintendent of the Johns Hopkins Hospital.*

WILLIAM S. HALSTED, M. D.

Professor of Surgery.

A. B., Yale College, 1874; M. D., College of Physicians and Surgeons (New York), 1877; formerly Attending Surgeon to the Presbyterian and Bellevue Hospitals, Associate Surgeon to Roosevelt Hospital, and Surgeon in Chief to Emigrant Hospital, New York; *Surgeon in Chief to the Johns Hopkins Hospital.*

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HOWARD A. KELLY, M. D.

Professor of Gynecology and Obstetrics.

A. B., University of Pennsylvania, 1877, and M. D., 1882; Associate Professor of Obstetrics, University of Pennsylvania, 1888–89; *Gynecologist and Obstetrician to the Johns Hopkins Hospital.*

FRANKLIN P. MALL, M. D.

Professor of Anatomy.

M. D., University of Michigan, 1883; Fellow of the Johns Hopkins University, 1886–88, and Assistant in Pathology, 1888–89; Adjunct Professor of Anatomy, Clark University, 1889–92; Professor of Anatomy, University of Chicago, 1892–93.

JOHN J. ABEL, M. D.

Professor of Pharmacology.

Ph. B., University of Michigan, 1883; Graduate Student, Johns Hopkins University, 1883–84; M. D., University of Strassburg, 1888; Professor of Materia Medica and Therapeutics, University of Michigan, 1891–93.

WILLIAM H. HOWELL, PH. D., M. D.

Professor of Physiology.

A. B., Johns Hopkins University, 1881, Fellow, 1882–84, Ph. D., 1884; Assistant in Biology, 1884–85, Associate, 1885–88, and Associate Professor, 1888–89; Lecturer, University of Michigan, 1889–90; M. D., 1890, and Professor of Physiology and Histology, 1890–92; Associate Professor of Physiology, Harvard University, 1892–93.

WILLIAM K. BROOKS, PH. D., LL. D.

Professor of Comparative Anatomy and Zoölogy.

A. B., Williams College, 1870, and LL. D., 1893; Ph. D., Harvard University, 1875; Fellow, Johns Hopkins University, 1876, Associate, 1876–83, and Associate Professor, 1883–91.

LECTURER.

JOHN S. BILLINGS, M. D., LL. D.

Lecturer on the History and Literature of Medicine.

A. B., Oxford College (Ohio), 1857, and A. M., 1860; M. D., University of Cincinnati, 1860; LL. D., University of Edinburgh, 1884, Harvard University, 1886; D. C. L., University of Oxford, 1889; Hon. M. D., University of Dublin, 1892; Surgeon, U. S. Army, and Librarian of the Surgeon-General's Office.

ASSOCIATES AND ASSISTANTS.

GEORGE H. F. NUTTALL, M. D., PH. D.

Associate in Hygiene.

M. D., University of California, 1884; Graduate Student in the Johns Hopkins University, 1885–86, 1890–91, and Assistant, 1891–92; Ph. D., University of Göttingen, 1890.

SIMON FLEXNER, M. D.

Associate in Pathology.

M. D., University of Louisville, 1889; Graduate Student in the Johns Hopkins University, 1890–91, and Fellow in Pathology, 1891–92.

JOHN M. T. FINNEY, M. D.

Associate in Surgery.

A. B., Princeton College, 1884; M. D., Harvard University, 1888; Associate in Surgery, Johns Hopkins Hospital.

HUNTER ROBB, M. D.

Associate in Gynecology.

M. D., University of Pennsylvania, 1884; Associate in Gynecology, Johns Hopkins Hospital.

J. WHITRIDGE WILLIAMS, M. D.

Associate in Obstetrics.

A. B., Johns Hopkins University, 1886; M. D., University of Maryland, 1888; Assistant in Gynecology, Johns Hopkins Hospital.

B. MEADE BOLTON, M. D.

Associate in Bacteriology.

M. D., University of Virginia, 1879; Graduate Student in the Johns Hopkins University, 1886–87, and Assistant in Pathology, 1887–88; Professor of Physiology and Hygiene, South Carolina University, 1888–89; Director of the Department of Bacteriology, Hoagland Laboratory, Brooklyn, 1889–92.

THOMAS B. ALDRICH, PH.D.

Assistant in Physiological Chemistry.

Ph. D., University of Jena, 1891, and Assistant in Chemistry, Jena, 1891–92.

J. WILLIAMS LORD, M.D.

Instructor in Anatomy.

A. B., Johns Hopkins University, 1884; M. D., University of Pennsylvania, 1887.

LEWELLYN F. BARKER, M. B.

Associate in Anatomy.

M. B., University of Toronto, 1890; Fellow in Pathology, Johns Hopkins University, 1892–94.

GEORGE P. DREYER, PH. D.

Associate in Physiology.

A. B., Johns Hopkins University, 1887, Fellow in Biology, 1889–90, and Ph. D., 1890.

STUDENTS.*

CANDIDATES FOR THE DEGREE OF M. D.

Charles Russell Bardeen. A. B., Harvard University, 1893.	Syracuse, N. Y.	605 *N. Eutaw St.*
Thomas Richardson Brown. A. B., Johns Hopkins University, 1892.	Baltimore.	1033 *Cathedral St.*
Cornelia Chapel Church. A. B., Smith College, 1888.	Pasadena, Cal.	128 *W. Franklin St.*
Walter S. Davis. S. B., Amherst College, 1893.	Minneapolis, Minn.	1019 *McCulloh St.*
Lester Wiggins Day. Ph. B., Yale University, 1893.	Baltimore.	9 *W. North Av.*
Mabel Stanley Glover. S. B., Wellesley College, 1892.	Washington, D. C.	812 *St. Paul St.*
Louis Philip Hamburger. A. B., Johns Hopkins University, 1893.	Baltimore.	1501 *Eutaw Place.*
Guy LeRoy Hunner. S. B., University of Wisconsin, 1893.	Madison, Wis.	645 *N. Paca St.*
Frank Allemong Lupton. S. B., Alabama Polytechnic Institute, 1891, and M. S., 1892.	Auburn, Ala.	1213 *Bolton St.*
Irving Phillips Lyon. A. B., Yale University, 1893.	Hartford, Conn.	220 *W. Madison St.*
Charles N. McBryde. S. B., University of South Carolina, 1891; M. S., Virginia Agricultural and Mechanical College, 1892.	Blacksburg, Va.	1205 *Bolton St.*
William Watson McCulloh. A. B., Johns Hopkins University, 1889.	Baltimore.	929 *McCulloh St.*
James Farnandis Mitchell. A. B., Johns Hopkins University, 1891.	Baltimore.	1013 *Cathedral St.*
Joseph Longworth Nichols. A. B., Harvard University, 1893.	Cincinnati, O.	*The Albany.*
Mary Secord Packard. A. B., Vassar College, 1892.	Bayonne, N. J.	812 *St. Paul St.*
Omar Borten Pancoast. S. B., Swarthmore College, 1893.	Woodstown, N. J.	916 *McCulloh St.*
Clement Andariese Penrose. A. B., Johns Hopkins University, 1893.	Baltimore.	13 *E. Preston St.*
Richard Pearson Strong. Ph. B., Yale University. 1893.	Baltimore.	*Fort McHenry.*

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* These students matriculated in the first year of the regular medical course in October, 1893.

ENDOWMENT.

The Medical Department of the Johns Hopkins University was opened for the instruction of students October 2, 1893.

The founder of the Johns Hopkins University, in devoting his large fortune to the establishment of the university and the hospital, had in view the organization of a school of medicine. In his letter addressed to the Trustees of the hospital, dated March 10th, 1873, these significant words occur:

"It will be your especial duty to secure, for the service of the hospital, surgeons and physicians of the highest character and greatest skill . . . . In all your arrangements in relation to this hospital, you will bear constantly in mind that it is my wish and purpose that the institution shall ultimately form a part of the Medical School of that University for which I have made ample provision by my will."

When the University was opened in 1876, ample provision was made for instruction in those sciences, such as physics, chemistry, and biology, which lead up naturally to the professional study of medicine. In 1884 the professorship of pathology was filled and the pathological laboratory was opened. In 1889 the Johns Hopkins Hospital was opened and the physician, surgeon, and gynecologist in chief to the hospital were appointed to the professorships respectively of medicine, surgery, and gynecology and obstetrics. Opportunities for instruction were afforded to graduates in medicine. Ampler endowment, however, was needed to complete the organization of a medical department worthy of the University.

Gifts amounting to $111,731.68, most of which were offered to this University in October, 1890, by a committee of women, and an additional gift of $306,977, offered to the University in December, 1892, in addition to her previous subscriptions, by Miss Mary Elizabeth Garrett, made up, with other available resources, the amount of $500,000, which had been agreed upon by the Trustees as the minimum endowment of the Medical Department. These contributions were made upon condition that women be received upon the same terms as men. This endowment enabled the Trustees to complete the organization of the Medical Department and to open it for instruction in 1893.

The Medical Department is an integral part of and under the direction of the Johns Hopkins University. It derives great advantages from its close affiliation with the Johns Hopkins Hospital.

TERMS OF ADMISSION.

The Medical Department of this university is planned for the professional education of those students who have been especially fitted to receive its instructions by a course of preliminary training in the liberal arts, and especially in those branches of science, like physics, chemistry, and biology, which underlie the medical sciences. Men and women are admitted upon the same terms.

As candidates for the degree of Doctor of Medicine the school receives:

1. Those who have satisfactorily completed the Chemical-Biological course which leads to the A. B. degree in this university.

2. Graduates of approved colleges or scientific schools who can furnish evidence: (*a*) That they have a good reading knowledge of French and German; (*b*) That they have such knowledge of physics, chemistry, and biology as is imparted by the regular minor courses, given in these subjects in this university.

The phrase "a minor course," as employed in this university, means a course that requires a year for its completion. In physics, five class-room exercises and three hours a week in the laboratory; in chemistry and biology five class-room exercises and five hours a week in the laboratory in each subject are required.[1]

3. Those who give evidence by examination that they possess the general education implied by a degree in arts or in science from an approved college or scientific school and the knowledge of French, German, physics, chemistry, and biology above indicated.

Applicants for admission will receive blanks to be filled out relating to their previous courses of study.

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[1] As so many inquiries have been received regarding the character and amount of the requisite training indicated by the term "Minor Course" in these sciences, it may be stated that the candidate should have followed for at least a year a laboratory course in the structure, life history, and vital activities of selected types of animal and vegetable life. In the Chemical-Biological course for undergraduates in this university the laboratory work in biology at present includes the study of such selected types as amœba, hæmatococcus, yeast, penicillium, bacteria, mushroom, hydra, vorticella, a fern, a flowering plant, the earthworm, lobster, anodon; the gross and minute anatomy of the frog, the development of its eggs, the structure, formation, and metamorphoses of the tadpole; the study and drawing of the bones of the human skeleton; the comparison of some parts of related vertebrate skeletons; dissection of a mammal; the field and laboratory study of some few flowering plants. The laboratory work is the more important part, the lectures and other exercises subsidiary.

It is of course not to be understood that this curriculum of biological work must be rigidly followed. Equivalent work will be accepted.

The candidate should have followed a course in general Chemistry for at least a year. This course should include laboratory work, about five hours a week through the year, and lectures and class-room work covering the outlines of inorganic chemistry and the elements of organic chemistry. A good knowledge of the subject as presented in Remsen's "Introduction to the Study of Chemistry" may be regarded as the minimum requirement. A fuller knowledge of Chemistry is, of course, desirable.

In Physics, the candidate should have followed a collegiate course for at least one year. This should include five hours a week of class-room work and at least three hours a week of quantitative work in the laboratory. Special attention should be given to theoretical mechanics and to the mechanical and electrical experiments.

They are required to furnish certificates from officers of the colleges or scientific schools where they have studied as to the courses pursued in physics, chemistry, and biology. If such certificates are satisfactory, no examination in these subjects will be required.

Hearers, not candidates for a degree, will be received at the discretion of the Faculty.

Candidates who have not received diplomas of the required character will be examined for admission at the beginning of the session.

No one will be admitted to advanced standing without furnishing evidence that these terms of admission as regards preliminary training have been fulfilled, and that courses equivalent in kind and amount to those given here, preceding that year of the course for admission to which application is made, have been satisfactorily completed.

GENERAL PLAN OF INSTRUCTION.

The course of instruction continues through four years. The academic year begins October 1, and closes about the middle of June. There are recesses at Christmas and Easter. Anatomy, including normal histology and embryology, physiology and physiological chemistry are the principal studies of the first year. The study of anatomy is continued in the second year, and, in addition, pharmacology, general pathology and pathological anatomy, bacteriology, and the general principles of medicine and surgery are taken up. During the last two years clinical instruction will be given in medicine, surgery, obstetrics, and gynecology, and the various special branches of practical medicine and surgery, such as ophthalmology, dermatology, laryngology, neurology, pædiatrics. Instruction in hygiene, psychiatry, legal medicine and medical history will be provided during the course.

Abundant clinical material is afforded by the Johns Hopkins Hospital and Dispensary. The Clinical Amphitheatre and the Clinical Laboratories are in the Hospital buildings.

Physiology is taught in the Biological Laboratory of the University.

The Pathological Laboratory, which for the present accommodates also the department of pharmacology, is a four-story building on the grounds of the Hospital. This building contains the autopsy theatre, the pathological museum, and rooms for bacteriology, pathological histology, experimental pathology, pharmacology, and special research.

A new and commodious Anatomical Building, three stories in height, is to be erected this year upon a large plot of ground owned by the University near the Hospital. It is expected that this building, in which the department of physiological chemistry will for the present find accommodation, will be ready for use in the Autumn of 1894.

In the main building of the Hospital is a good medical library with full sets of medical periodicals. The various special laboratories possess also appropriate libraries. These, as well as the libraries and reading room of the University, and those of the Peabody Institute, are available without charge for the use of medical students.

Practical work in the dissecting room, in the laboratory, and at the bedside, demonstrations, clinics, lectures, and recitations, form the most prominent features of the methods of instruction.

FIRST AND SECOND YEAR COURSES.

Inasmuch as for the coming year students, who are candidates for the degree of Doctor of Medicine, will be admitted only to the medical courses of the first and second years, the statement of the curriculum of these years is all that is announced in detail at present. Similar statements regarding the courses for the third and fourth years will be made hereafter.

ANATOMY.

The instruction in Anatomy is under the charge of Dr. FRANKLIN P. MALL, Professor of Anatomy, with the aid of Dr. J. Williams Lord, Instructor in Anatomy, and Dr. Lewellyn F. Barker, Associate in Anatomy.

The course in anatomy consists of vertebrate embryology, histology and histogenesis, and human anatomy. It is recommended that the student complete the greater part of the work in anatomy during the first academic year.

The course in embryology and histology is continuous during the first year, although either course may be taken by itself.

During the autumn and winter instruction in histology is given by lectures, demonstrations, and laboratory work. In the spring, vertebrate embryology is taught. The aim of the latter course is to throw as much light as possible upon the structure and development of tissues and organs and upon human anatomy in general.

Parallel with the above course that on human anatomy is given.

Beginning in the autumn with lectures, recitations, and demonstrations in osteology, the study of human anatomy is continued with practical work in the dissecting-room as soon as cool weather sets in. The aim is to teach as much as possible of human anatomy by work in the dissecting-room and by demonstrations, leaving only certain general and special topics for the lecture-room.

The more difficult dissections as well as the anatomy of the central nervous system are reserved for the second year.

Applied anatomy will be taught by the professors of medicine, surgery, and gynecology.

The new anatomical laboratory will be large enough to meet all the requirements and will be fitted up with all the necessary apparatus for instruction and research in embryology, histology, and gross anatomy. Instead of one large dissecting room, there will be a number of small dissecting rooms, which will thus afford the best opportunity for study. They will be open during the whole day and the evening.

PHYSIOLOGY.

The instruction in Physiology is under the charge of Dr. WILLIAM H. HOWELL, Professor of Physiology, assisted by Dr. George P. Dreyer, Associate in Physiology. It continues throughout the first year.

The work consists of lectures, experimental work in the laboratory, demonstrations, recitations, and conferences. Lectures are given three times a week throughout the year, and are fully illustrated by experiments and demonstrations given in the lecture-room. Weekly recitations are held upon the subject-matter covered by the lectures, and in the latter half of the year weekly conferences also form part of the class work.

The laboratory course is arranged so as to occupy six hours a week for about twelve weeks. In this course the students are required to perform the simpler experiments upon muscle, nerve, circulation, and vision, making use of the various graphic methods employed in physiology. The work is intended to give an idea of the methods used in experimental physiology, and to furnish also that basis of actual acquaintance with facts which is necessary for intelligent reading.

In addition to the foregoing exercises, which comprise the required work, students are given opportunities to participate in the more advanced courses carried on in the laboratory, and intended primarily as graduate work. These courses are as follows: A biological journal club meets weekly to discuss the recent literature in the various fields of biological research, including animal physiology. A physiological seminary meets weekly during the first half of the year to read and discuss some one or more of the older contributions to physiology, which are of interest because of their bearing upon the historical development of the science. In the latter half of the year the same hour is given up to a series of advanced lectures upon special topics in physiology, in which the subjects presented are treated exhaustively from the standpoint of the most recent contributions. An advanced course of laboratory work is arranged,—intended to teach the methods of physiological demonstration and research. This course is under the control of the professor of physiology, and is not limited as to time or amount of work, with the exception that assistance from the professor must be arranged for by definite engagements. This course is designed for those who expect to become teachers or investigators in physiology, pathology, or pharmacology, and the number permitted to take it is necessarily limited. For purposes of research the laboratory is well equipped. Those who are prepared to undertake special investigation are given every opportunity for work, including shop facilities for the construction of new apparatus.

PHYSIOLOGICAL CHEMISTRY.

The instruction in Physiological Chemistry is for the present under the charge of Dr. JOHN J. ABEL, Professor of Pharmacology, with the aid of Thomas B. Aldrich, Ph.D., Assistant in Physiological Chemistry.

Instruction in this branch is given by illustrated lectures, conferences of a less formal character, and laboratory work. It continues throughout the first year of the course.

In the lectures the substances that have been isolated from the fluids and tissues of the body are considered chiefly with regard to their connection with physiological processes. The physical and chemical properties of these substances and their chemical relationships also receive due attention whenever they promise to throw light on animal metabolism, for it is thought that a treatment of the subject which emphasizes the chemical properties of the constituents of the body will best prepare the student to meet important questions that will arise later in his study of pathology, pharmacology, hygiene, and practical medicine.

The laboratory instruction covers the following ground:

1. The isolation of the more important constituents of the various tissues and fluids of the body, of its secretions and excretions in health and in disease, and the study of such of the physical and chemical properties of these constituents as are of most importance from the physiological point of view.

2. The synthetic formation of some of these constituents, such as urea, uric acid, hippuric acid, cholin, leucin, and phenylsulphate of potassium.

3. Selected qualitative and quantitative methods employed in the study of the various tissues, the products of gastric and pancreatic digestion, the urine, blood, bile, biliary and renal calculi, milk, pus, and faeces.

PHARMACOLOGY AND TOXICOLOGY.

The instruction in Pharmacology is under the direction of Dr. JOHN J. ABEL, Professor of Pharmacology, with the aid of an Assistant. The instruction is given in the second year of the course by illustrated lectures and by laboratory work. Pharmacology is taught largely by the experimental method, and students will themselves arrange apparatus and perform experiments under the immediate supervision of the professor in charge.

The practical work includes such topics as the action of drugs on the heart, vessels and vasomotor apparatus, on the respiratory apparatus, brain and spinal cord, voluntary and involuntary muscles, kidneys, salivary and sweat glands, intestines, liver, etc. The chemical side of Pharmacology also receives due attention. The fate of drugs in the organism, their influence on the metabolism of the body and the manner of their excretion are studied in the laboratory in a number of typical instances. This practical work on both the physiological and chemical sides of Pharmacology occupies three afternoons a week throughout the first half of the second year.

A course of lectures with demonstrations in Toxicology will be given once a week in the second half-year.

It is expected that Pharmacy will be treated in a short course of illustrative lectures to be given by a skilled pharmacist, and that a short course of lectures with demonstrations will also be given on the subject of medical botany by a specialist in that branch.

Actual practice in prescribing drugs and in the employment and application of the various therapeutic agents used in medicine will be offered in connection with the practical clinical work of the third and fourth years.

PATHOLOGY AND BACTERIOLOGY.

The instruction in Pathology and Bacteriology is under the charge of Dr. WILLIAM H. WELCH, Professor of Pathology, with the coöperation of Dr. Simon Flexner, Associate in Pathology, and Dr. B. Meade Bolton, Associate in Bacteriology.

General and Special Pathological Anatomy and General Pathology are taught by lectures, recitations, demonstrations, and laboratory work. Instruction is given in the methods of making post mortem examinations and of recording in proper protocols the results. These courses continue throughout the second year. The laboratory work occupies three afternoons a week.

The principal subjects in General Pathology are taught as far as practicable by actual demonstration and experiment. Gross Morbid Anatomy and Pathological Histology are studied in conjunction with each other, the description and demonstration of gross lesions being followed by the preparation and examination of the microscopical lesions. Instruction in the technique of making pathological examinations, including the methods of pathological histology, and practice in pathological diagnosis are afforded. The students are required to make post-mortem examinations and to dictate protocols.

Bacteriology is taught by a practical laboratory course occupying nine hours a week for two months. Here the student becomes familiar with the preparation of culture media, the principles of sterilization and disinfection, the methods of cultivating, staining, and studying bacteria, the biological examination of air, water, and soil, and the important species of known pathogenic micro-organisms.

In addition to the courses for undergraduates in medicine opportunity is afforded for advanced work and special research in Pathological Histology, Experimental Pathology, and Bacteriology. For these purposes the Pathological Laboratory is well equipped with the necessary apparatus and is provided with sufficient material.

MEDICINE.

Under the charge of Dr. WILLIAM OSLER, Professor of Medicine, instruction will be given during the third and fourth years by means of ward classes, conferences, and work in the clinical laboratory. As a preparation for it, instruction will be given towards the latter part of the second year by Professor Osler in Medical Topography and in Clinical Physiology.

SURGERY.

The instruction in Surgery is under the charge of Dr. WILLIAM S. HALSTED, Professor of Surgery. The principal instruction in surgery will be given during the third and fourth years.

As an introduction to the clinical and operative courses of these years, Professor Halsted will conduct during the latter part of the second year a course upon the Healing of Wounds in its Surgical Aspects. This is to be a practical course with laboratory methods and abundant material for observation. Both the macroscopical and the microscopical appearances of the various stages of repair of wounds will be studied. Among the subjects to be considered will be the characters of wounds of the various tissues and organs, such as the skin and subcutaneous tissues, bone, cartilage, muscle, tendon, vessels, intestine, etc.; healing by first and second intention and by granulation; the effect upon the progress of wounds of ligatures, sutures, drainage tubes, chemical substances, and foreign bodies in general.

CHARGES FOR TUITION.

The charge for tuition is two hundred dollars per annum, payable at the Treasurer's office, in semi-annual instalments, October 1 and February 1. There are no extra charges for instruction in any department or for laboratory courses except for materials consumed. A deposit of ten dollars as caution money is required from each student at the time of his enrolment. The caution money is repaid to the student when he leaves, if there are no charges against him. Special charges are made for breakage and for damage to apparatus.

Inquiries may be addressed to the Registrar of the Johns Hopkins University.

APPENDIX.

I.

THE MARY ELIZABETH GARRETT FUND.*

TERMS OF THE GIFT, AS ACCEPTED BY THE TRUSTEES, FEBRUARY 21, 1893.

Miss Mary Elizabeth Garrett, in order to make up the sum of $500,000, which the Board of Trustees required should be secured as an endowment before the Medical School of the University was opened, has contributed to that fund the sum of $306,977 upon the following terms, which have been agreed to by the University:

1. That women shall enjoy all the advantages of the Medical School of the Johns Hopkins University on the same terms as men, and shall be admitted on the same terms as men to all prizes, dignities or honors that are awarded by competition, examination or regarded as rewards of merit.

2. That not more than $50,000 of the original endowment of $500,000 shall be expended on a building or buildings; and that in memory of the contributions of the Committees of the Women's Medical School Fund, this building, if there be but one, or the chief building, if there be more than one, shall be known as the Women's Fund Memorial Building.

3. That the Medical School of the University shall be exclusively a graduate school as hereinafter explained, that is to say: That the Medical School of the Johns Hopkins University shall form an integral part of the Johns Hopkins University, and like other departments of the University, shall be under the management and control of the Trustees of the said University; that it shall provide a four years' course, leading to the degree of Doctor of Medicine; that there shall be admitted to the School those students only who by examination or by other tests equally satisfactory to the Faculty of the Medical School (no distinction being made in these tests or examinations between men and women), have proved that they have completed the studies included in the Preliminary Medical Course (Group Three, Chemical-Biological Course) as laid down in the University Register (but this condition is not meant to restrict the Trustees from receiving as hearers, but not as candidates for the degree of Doctor of Medicine, those who have received the degree of Doctor of Medicine, or its equivalent, in some school of good repute); and that the degree of Doctor of Medicine of the Johns

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*So designated by the Trustees, December 24, 1892.

Hopkins University shall be given to no Doctors of Medicine who have not proved by examination or by other tests equally satisfactory to the Faculty of the Medical School that they have completed the studies included in the Preliminary Course, besides completing the course of instruction of the Medical School of the Johns Hopkins University.

The aforegoing provisions shall not be construed as restricting the liberty of the University to make such changes in the requirements for the admission to the Medical School of the Johns Hopkins University or to accept such equivalents for the studies required for admission to this school as shall not lower the standard of admission specified in this clause: provided that the requirements in modern languages other than English shall not be diminished, and provided also that the requirements in non-medical scientific studies shall include at least as much knowledge of natural science as is imparted in the three minor courses in science now laid down in its university register, the subjects and arrangements of these scientific studies being subject to such modifications as may from time to time seem wise to its Board and to the Faculty of the Medical School, but being at all times the same for all candidates for admission. (For such requirements always see University Register.)

4. That the terms of this gift and the Resolutions of October 28th, 1890, by which the Trustees accepted the gift of the Women's Medical School Fund, shall be printed each year in whatever annual calendars may be issued announcing the courses of the Medical School.—See appended Resolutions.

5. That there shall be created a committee of six women to whom the women studying in the Medical School may apply for advice concerning lodging and other practical matters, and that all questions concerning the personal character of women applying for admission to the School, and all non-academic questions of discipline affecting the women studying in the Medical School shall be referred to this committee, and by them be in writing reported for action to the authorities of the University; that the members of this committee shall be members for life; that the committee, when once formed, shall be self-nominating, its nominations of new members to fill such vacancies as may occur being subject always to the approval of the Board of Trustees of the University.

6. That in the event of any violation of any or all of the aforesaid stipulations, the said sum of $306,977 shall revert to her, or such person or persons, institution or institutions, as she by testament or otherwise may hereafter appoint.

It will be observed that by the tenor of the aforegoing terms no university course will be in any way modified by any conditions attached to her gift. Those conditions relate exclusively to preparation for the Medical School, and have received, in the shape in which they are now presented, the unanimous approval of the Medical Faculty of the University.

The terms of admission to the Medical School of the University as formulated and interpreted by the Medical Faculty of the University, February

4, 1893, and here subjoined, are therefore in entire accordance with the terms of her gift.

(Signed) MARY E. GARRETT.

REQUIREMENTS FOR ADMISSION TO THE MEDICAL SCHOOL OF THE JOHNS HOPKINS UNIVERSITY, UNANIMOUSLY APPROVED BY THE MEDICAL FACULTY, FEBRUARY 4, 1893.

A course of four years' instruction will be provided leading to the degree of Doctor of Medicine.

To this course there will be admitted as candidates for the degree:

1. Those who have satisfactorily completed the Chemical-Biological Course which leads to the A. B. degree in this University.
2. Graduates of approved Colleges or Scientific Schools who can furnish evidence: (*a*) That they have a good reading knowledge of French and German; (*b*) That they have such knowledge of Physics, Chemistry and Biology as is imparted by the regular Minor Courses given in these subjects in this University.
3. Those who give evidence by examination that they possess the general education implied by a degree in arts or in science from an approved College or Scientific School, and the knowledge of French, German, Physics, Chemistry and Biology, already indicated.

By approved Colleges and Scientific Schools are meant those whose standard for graduation shall be considered by this University as essentially equivalent to its standard for graduation in the undergraduate department.

It is to be understood that at least one year's study in the Chemical and Biological Sciences in their immediate relations to medicine shall be required from students after their entrance to the medical school.

II.

THE WOMEN'S MEDICAL SCHOOL FUND.

At a meeting of the Board of Trustees of the University, October 28, 1890, the following letter was presented:

"The committees formed for the purpose of raising a fund to procure the most advanced medical education for women, can now place at your disposal the sum of one hundred thousand dollars for the use of your medical school, if you will, by resolution, agree that women whose previous training has been equivalent to your preliminary medical course, shall be admitted to the school, when it shall open, upon the same terms which may be prescribed for men. There can be no doubt that women ought to be trained to act as nurses for sick women. There is as little doubt that a sufficient number of women ought to be educated and trained in such manner as to be fully able to care for sick women who may wish or ought to be treated by women. We have devoted ourselves to the furtherance of this object. We have reason to hope that a university which proposes to found a medical school intended to teach advanced methods in the treatment of those diseases which afflict mankind, will not refuse to women the opportunity of learning such methods. There is now a general interest in our movement. In order that this interest may be sustained we ask you to consider our offer at the earliest possible period.

NANCY MORRIS DAVIS,
Chairman of the Baltimore Committee."

The following minute was adopted by the Trustees:

The President and Board of Trustees of the Johns Hopkins University have received from Mrs. Nancy Morris Davis, chairman of one of the committees formed for the purpose of raising a fund to procure the most advanced medical education for women, the gratifying intelligence that $100,000 has been raised for the use of their intended Medical School, and is at their disposal, if they will, by resolution, agree to the terms upon which the money was contributed by its donors.

These terms are that this Board, if it accepts the funds thus raised, shall agree, by resolution, that, when its Medical School shall be opened, women whose training has been equivalent to the preliminary medical course prescribed for men, shall be admitted to such school upon the same terms as may be prescribed for men.

The offer to this University of the particular fund is the free voluntary act of women residing in this State and in other States, made without the suggestion or solicitation of this Board, and we accept it under and subject to the terms which are made a part of the gift, with the understanding and declaration, however, that such preliminary training in all its parts shall be obtained in some other institution of learning devoted, in whole or in part, to the education of women, or by private tuition.

The fund so contributed shall be invested and known as "The Women's Medical School Fund," and that fund, and all interest to accrue thereon, and all additions made thereto for the same purpose, shall remain invested for the purposes of increase only until, with its aid as a foundation, a general fund has been accumulated amounting to not less than $500,000, and sufficient for the establishment and maintenance of a Medical School worthy of the reputation of this University and fully sufficient as a means of complete medical instruction. Then, and not until then, will a Medical School be opened by this University; and then, and not until then, will the gift now offered be used by this University; and then, and not until then, will the terms attached thereto be operative.

The utility of a training school for women nurses has been demonstrated by the experience and practice of the Johns Hopkins Hospital, and by the necessities of home life among our people.

This Board is satisfied that in hospital practice among women, in penal institutions in which women are prisoners, in charitable institutions in which women are cared for, and in private life, when women are to be attended, there is a need and place for learned and capable women physicians; and that it is the business and duty of this Board, when it is supplied with the necessary means for opening its proposed Medical School, to make provision for the training and full qualification of such women for the abundant work which awaits them in these wide fields of usefulness.

Nothing contained in this minute shall be construed as abridging, in any manner, the right of the Board of Trustees of the Johns Hopkins University to make such rules and regulations as they may deem necessary for the government of its School of Medicine, when it is organized; and in making such rules and regulations, the terms of this minute shall always be respected and observed.

WOMEN'S COMMITTEE OF THE MEDICAL SCHOOL, APPOINTED BY MISS GARRETT, DECEMBER 22, 1892.

Their duties are stated in paragraph 5 of the letter printed above.

MRS. HENRY M. HURD,
MRS. IRA REMSEN,
MRS. WILLIAM OSLER,
MISS M. CAREY THOMAS,
MISS MARY M. GWINN,
MISS MARY E. GARRETT.

JOHN MURPHY & CO., PRINTERS,
BALTIMORE.

THE

JOHNS HOPKINS

MEDICAL SCHOOL

ESTABLISHED BY THE JOHNS HOPKINS UNIVERSITY
IN CONNECTION WITH THE JOHNS HOPKINS HOSPITAL,
BALTIMORE, MARYLAND.

ANNUAL ANNOUNCEMENT, 1895-96

THE JOHNS HOPKINS PRESS
BALTIMORE
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BALTIMORE, MARYLAND.

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BALTIMORE
1895

TRUSTEES OF THE JOHNS HOPKINS UNIVERSITY.

C. MORTON STEWART,
President.

FRANCIS WHITE,
Treasurer.

LEWIS N. HOPKINS,
Secretary.

LEWIS N. HOPKINS,
FRANCIS WHITE,
JAMES CAREY THOMAS,
C. MORTON STEWART,
JOSEPH P. ELLIOTT,
J. HALL PLEASANTS,
ALAN P. SMITH,
ROBERT GARRETT,
JAMES L. MCLANE,
W. GRAHAM BOWDOIN,
WILLIAM T. DIXON,
BENJAMIN F. NEWCOMER,
THE PRESIDENT OF THE UNIVERSITY, *ex officio.*

TRUSTEES OF THE JOHNS HOPKINS HOSPITAL.

WILLIAM T. DIXON,
President.

JOSEPH P. ELLIOTT,
Vice-President.

LEWIS N. HOPKINS,
Secretary.

FRANCIS WHITE,
LEWIS N. HOPKINS,
ALAN P. SMITH,
JOSEPH P. ELLIOTT,
GEORGE W. CORNER,
C. MORTON STEWART,
WILLIAM T. DIXON,
JOHN E. HURST,
JAMES L. MCLANE,
CHARLES F. MAYER,
JOHN A. WHITRIDGE,
HENRY D. HARLAN.

FACULTY.

The names are arranged in the several groups in the order in which the members of the staff assumed their duties.

PRESIDENT.

DANIEL C. GILMAN, LL. D.

A. B., Yale College, 1852, and A. M., 1855; LL. D., Harvard University, 1876, St. John's College, 1876, Columbia College, 1887, Yale University, 1889, and University of North Carolina, 1889; Professor in Yale College, 1863–72; President of the University of California, 1872–75.

PROFESSORS.

WILLIAM H. WELCH, M. D., LL. D.

Professor of Pathology and Dean.

A. B., Yale College, 1870; M. D., College of Physicians and Surgeons (N. Y.), 1875; Hon. M. D., University of Pennsylvania, 1894; LL. D., Western Reserve University, 1894; Professor of Pathological Anatomy and General Pathology in the Bellevue Hospital Medical College, N. Y., 1879–84; *Pathologist to the Johns Hopkins Hospital.*

IRA REMSEN, M. D., PH. D., LL. D.

Professor of Chemistry.

A. B., College of the City of New York, 1865; M. D., College of Physicians and Surgeons, N. Y., 1867; Ph. D., University of Göttingen, 1870; LL. D., Columbia College, 1893; Professor of Chemistry in Williams College, 1872–76, and previously Assistant in Chemistry in the University of Tübingen; *Editor of the American Chemical Journal.*

WILLIAM OSLER, M. D., F. R. C. P.

Professor of the Principles and Practice of Medicine.

M. D., McGill University, 1872; Fellow of the Royal College of Physicians, London; Professor of the Institutes of Medicine, McGill University, Montreal, 1874–1884; Professor of Clinical Medicine, University of Pennsylvania, 1884–89; *Physician in Chief to the Johns Hopkins Hospital.*

HENRY M. HURD, M. D.

Professor of Psychiatry.

A. B., University of Michigan, 1863, and A. M., 1870; M. D., University of Michigan, 1866; Superintendent of the Eastern Michigan Asylum, 1878–89; *Superintendent of the Johns Hopkins Hospital.*

WILLIAM S. HALSTED, M. D.

Professor of Surgery.

A. B., Yale College, 1874; M. D., College of Physicians and Surgeons (New York), 1877: formerly Attending Surgeon to the Presbyterian and Bellevue Hospitals, Associate Surgeon to Roosevelt Hospital, and Surgeon in Chief to Emigrant Hospital, New York; *Surgeon in Chief to the Johns Hopkins Hospital.*

HOWARD A. KELLY, M. D.

Professor of Gynecology and Obstetrics.

A. B., University of Pennsylvania, 1877, and M. D., 1882; Associate Professor of Obstetrics, University of Pennsylvania, 1888–89; *Gynecologist and Obstetrician to the Johns Hopkins Hospital.*

FRANKLIN P. MALL, M. D.

Professor of Anatomy.

M. D., University of Michigan, 1883; Fellow of the Johns Hopkins University, 1886–88; and Assistant in Pathology, 1888–89; Adjunct Professor of Anatomy, Clark University, 1889–92; Professor of Anatomy, University of Chicago, 1892–93.

JOHN J. ABEL, M. D.

Professor of Pharmacology.

Ph. B., University of Michigan, 1883; Graduate Student, Johns Hopkins University, 1883–84: M. D., University of Strassburg, 1888; Professor of Materia Medica and Therapeutics, University of Michigan, 1891–93.

WILLIAM H. HOWELL, PH. D., M. D.

Professor of Physiology.

A. B., Johns Hopkins University, 1881; Fellow, 1882–84, Ph. D., 1884; Assistant in Biology, 1884–85, Associate, 1885–88, and Associate Professor, 1888–89; Lecturer, University of Michigan, 1889–90; M. D., 1890; and Professor of Physiology and Histology, 1890–92: Associate Professor of Physiology, Harvard University, 1892–93.

WILLIAM K. BROOKS, PH. D., LL. D.

Professor of Comparative Anatomy and Zoölogy.

A. B., Williams College, 1870, and LL. D., 1893; Ph. D., Harvard University, 1875; Fellow, Johns Hopkins University, 1876, Associate, 1876–83; and Associate Professor, 1883–91.

LECTURER.

JOHN S. BILLINGS, M. D., LL. D.

Lecturer on the History and Literature of Medicine.

A. B., Oxford College (Ohio), 1857, and A. M., 1860; M. D., University of Cincinnati, 1860; LL. D., University of Edinburgh, 1884, Harvard University, 1886; D. C. L., University of Oxford, 1889; Hon. M. D., University of Dublin, 1892; Surgeon, U. S. Army, and Librarian of the Surgeon-General's Office.

ASSOCIATE PROFESSOR.

SIMON FLEXNER, M. D.

Associate Professor of Pathology.

M. D., University of Louisville, 1889; Graduate Student in the Johns Hopkins University, 1890-91, Fellow, 1891-92, and Associate, 1892-95; *Resident Pathologist to the Johns Hopkins Hospital.*

ASSOCIATES AND ASSISTANTS.

JOHN M. T. FINNEY, M. D.

Associate in Surgery.

A. B., Princeton College, 1884; M. D., Harvard University, 1888; *Associate in Surgery, Johns Hopkins Hospital.*

J. WHITRIDGE WILLIAMS, M. D.

Associate in Obstetrics.

A. B., Johns Hopkins University, 1886; M. D., University of Maryland, 1888; *Associate in Obstetrics, Johns Hopkins Hospital.*

LEWELLYS F. BARKER, M. B.

Associate in Anatomy.

M. B., University of Toronto, 1890; Fellow in Pathology, Johns Hopkins University, 1892-94; *Assistant Resident Pathologist to the Johns Hopkins Hospital.*

GEORGE P. DREYER, PH. D.

Associate in Physiology.

A. B., Johns Hopkins University, 1887, Fellow in Biology, 1889-90, and Ph. D., 1890.

WILLIAM S. THAYER, M. D.

Associate in Medicine.

A. B., Harvard University, 1885, and M. D., 1889.

THOMAS B. ALDRICH, PH. D.

Assistant in Physiological Chemistry.

Ph. D., University of Jena, 1891, and Assistant in Chemistry, Jena, 1891-92.

J. WILLIAMS LORD, M. D.

Instructor in Anatomy.

A. B., Johns Hopkins University, 1884; M. D., University of Pennsylvania, 1887.

EDWIN S. FAUST, PH. D.

Second Assistant in Physiological Chemistry.

A. B., Johns Hopkins University, 1890; Ph. D., University of Munich.

ALBERT C. CRAWFORD, M. D.
Assistant in Pharmacology.
M. D., College of Physicians and Surgeons (Balt.), 1893.

JOSEPH C. BLOODGOOD, M. D.
Assistant in Surgery.
S. B., University of Wisconsin, 1888; M. D., University of Pennsylvania, 1891.

GEORGE BLUMER, M. D.
Assistant in Pathology.
M. D., Cooper Medical College, 1891.

ADOLPH G. HOEN, M. D.
Instructor in Photo-Micrography.
M. D., University of Maryland.

Assistant in Bacteriology.

STUDENTS, 1894-95.

CANDIDATES FOR THE DEGREE OF M. D.

Second Year.

CHARLES RUSSELL BARDEEN. A. B., Harvard University, 1893.	Syracuse, N. Y.	412 *N. Broadway.*
THOMAS RICHARDSON BROWN. A. B., Johns Hopkins University, 1892.	Baltimore.	1033 *Cathedral St.*
CORNELIA CHAPEL CHURCH. A. B., Smith College, 1888.	Pasadena, Cal.	812 *St. Paul St.*
WALTER S. DAVIS. S. B., Amherst College, 1893.	Minneapolis, Minn.	218 *W. Madison St.*
LESTER WIGGINS DAY. Ph. B., Yale University, 1893.	Baltimore.	9 *W. North Av.*
LOUIS PHILIP HAMBURGER. A. B., Johns Hopkins University, 1893.	Baltimore.	1501 *Eutaw Place.*
GUY LE ROY HUNNER. S. B., University of Wisconsin, 1893.	Madison, Wis.	514 *N. Broadway.*

Frank Allemong Lupton. S. B., Alabama Polytechnic Institute, 1891, and M. S., 1892; Graduate Student, Johns Hopkins University, October to January, 1893–94.	Auburn, Ala.	806 *N. Broadway.*
Irving Phillips Lyon. A. B., Yale University, 1893.	Hartford, Conn.	216 *W. Madison St.*
William George MacCallum. A. B., University of Toronto, 1894.	Dunnville, Ont.	714 *Park Av.*
Charles Neil McBryde. S. B., University of South Carolina, 1891; M. S., Virginia Agricultural and Mechanical College, 1892.	Blacksburg, Va.	1205 *Bolton St.*
William Watson McCulloh. A. B., Johns Hopkins University, 1889.	Baltimore.	929 *McCulloh St.*
James Farnandis Mitchell. A. B., Johns Hopkins University, 1891.	Baltimore.	1013 *Cathedral St.*
Joseph Longworth Nichols. A. B., Harvard University, 1893.	Cincinnati, O.	*The Albany.*
Eugene Lindsay Opie. A. B., Johns Hopkins University, 1893.	Baltimore.	219 *W. Monument St.*
Mary Secord Packard. A. B., Vassar College, 1892; Harvard Summer School, 1893.	Bayonne, N. J.	812 *St. Paul St.*
Omar Borton Pancoast. S. B., Swarthmore College, 1893.	Woodstown, N. J.	218 *W. Madison St.*
Clement Andariese Penrose. A. B., Johns Hopkins University, 1893.	Baltimore.	1318 *N. Charles St.*
Richard Pearson Strong. Ph. B., Yale University, 1893.	Baltimore.	*Fort McHenry.*

(19)

First Year.

William Stevenson Baer. A. B., Johns Hopkins University, 1894.	Baltimore.	24 *N. Broadway.*
Thomas Pumphrey Benson. A. B., Johns Hopkins University, 1894.	Wellham's X Roads.	*Wellham's X Roads.*
William Jephtha Calvert. A. B., University of Kentucky, 1893; Graduate Student, Kentucky State College, 1893–94.	Lexington, Ky.	112 *E. Monument St.*
Patrick Joseph Cassidy, A. B., Yale University, 1894.	Norwich, Conn.	432 *N. Broadway.*
John Williams Coe. Ph. B., Yale University, 1893.	Meriden, Conn.	514 *N. Broadway.*
Walter Cox. A. B., Johns Hopkins University, 1894.	Bel Alton.	*Bel Alton.*
Percy Millard Dawson. A. B., Johns Hopkins University, 1894.	Montreal, Canada.	*The Altamont.*
Arthur Wells Elting. A. B., Yale University, 1894.	Upper Red Hook, N. Y.	412 *N. Broadway.*
William Webber Ford. A. B., Adelbert College, 1893.	Norwalk, O.	1013 *Linden Av.*
Warren Leavitt Foss. A. B., Bowdoin College, 1891.	Stockton, Cal.	112 *E. Monument St.*

Thomas Wood Hastings. Morristown, N. J. 600 *N. Howard St.*
A. B., Johns Hopkins University, 1894.

Alfred Birch Herrick. Amsterdam, N. Y. 718 *N. Broadway.*
A. B., Williams College, 1894.

Mary Margaret Sewall Johnstone. Newburyport, Mass.
A. B., Smith College, 1894; Harvard Summer School, 1894. 615 *St. Paul St.*

James Hall Mason Knox. New Haven, Conn. 13 *E. Preston St.*
A. B., Yale University, 1892, and Ph. D., 1894.

Millard Langfeld. Baltimore. 2226 *Eutaw Place.*
A. B., Johns Hopkins University, 1893.

Leona Lebus. Los Angeles, Cal. 812 *St. Paul St.*
S. B., Wellesley College, 1889.

Gertrude Light. Milwaukee, Wis. 711 *St. Paul St.*
S. B., University of Wisconsin, 1894.

James Daniel Madison. Mazomanie, Wis. 514 *N. Broadway.*
S. B., University of Wisconsin, 1894.

Frank Stevens Maltby. Aurora, Ind. 112 *E. Monument St.*
A. B., Moore's Hill College, 1893; Graduate Student, Johns Hopkins University, 1893-94.

Harry Taylor Marshall. Baltimore. 1209 *St. Paul St.*
A. B., Johns Hopkins University, 1894.

Delia Maria O'Connell. Marlborough, Mass. 806 *N. Broadway.*
A. B., Vassar College, 1893; Graduate Student, Mass. Institute of Technology, 1893-94.

Roger Griswold Perkins. Schenectady, N. Y. 1128 *McCulloh St.*
A. B., Union College, 1893, and Harvard University, 1894.

Katherine Porter. Baltimore. 2100 *N. Calvert St.*
A. B., Bryn Mawr College, 1894.

Georgiana Sands. Port Chester, N. Y. 812 *St. Paul St.*
A. B., Vassar College, 1893; Graduate Student, Barnard College (N. Y.), 1893-94.

Benjamin Robinson Schenck. Syracuse, N. Y. 806 *N. Broadway.*
A. B., Williams College, 1894.

Harry Merriman Steele. Waterbury, Conn. *The Albany.*
Ph. B., Yale University, 1894.

Walter Ralph Steiner. Baltimore. 1038 *N. Eutaw St.*
A. B., Yale University, 1892; Graduate Student, Johns Hopkins University, 1892-94.

Caleb Rochford Stetson. Washington, D. C. 216 *W. Madison St.*
A. B., Harvard University, 1894.

William Stuart Walcott, Jr. New York Mills, N. Y. 412 *N. Broadway.*
A. B., Yale University, 1894.

Emma Elizabeth Walker. Parkersburg, W. Va. 615 *St. Paul St.*
A. B., Smith College, 1887.

Andrew Henderson Whitridge. Baltimore. 13 *W. Read St.*
S. B., Harvard University, 1894.

Katherine Wolfe. Tiffin, O. 711 *St. Paul St.*
B. L. and S. B., Adrian College (Mich.), 1889; Graduate Student, Yale and Chicago Universities, 1892-94.

(32)

ENDOWMENT.

The Medical Department of the Johns Hopkins University was opened for the instruction of students October 2, 1893.

The founder of the Johns Hopkins University, in devoting his large fortune to the establishment of the university and the hospital, had in view the organization of a school of medicine. In his letter addressed to the Trustees of the hospital, dated March 10th, 1873, these significant words occur:

"It will be your especial duty to secure, for the service of the hospital, surgeons and physicians of the highest character and greatest skill. . . . In all your arrangements in relation to this hospital, you will bear constantly in mind that it is my wish and purpose that the institution shall ultimately form a part of the Medical School of that University for which I have made ample provision by my will."

When the University was opened in 1876, ample provision was made for instruction in those sciences, such as physics, chemistry, and biology, which lead up naturally to the professional study of medicine. In 1884 the professorship of pathology was filled and the pathological laboratory was opened. In 1889 the Johns Hopkins Hospital was opened and the physician, surgeon, and gynecologist in chief to the hospital were appointed to the professorships respectively of medicine, surgery, and gynecology and obstetrics. Opportunities for instruction were afforded to graduates in medicine. Ampler endowment, however, was needed to complete the organization of a medical department worthy of the University.

Gifts amounting to $111,731.68, most of which were offered to this University in October, 1890, by a committee of women, and an additional gift of $306,977, offered to the University in December, 1892, in addition to her previous subscriptions, by Miss Mary Elizabeth Garrett, made up, with other available resources, the amount of $500,000, which had been agreed upon by the Trustees as the minimum endowment of the Medical Department. These contributions were made upon condition that women be received upon the same terms as men. This endowment enabled the Trustees to complete the organization of the Medical Department and to open it for instruction in 1893.

The Medical Department is an integral part of and under the direction of the Johns Hopkins University. It derives great advantages from its close affiliation with the Johns Hopkins Hospital.

TERMS OF ADMISSION.

The Medical Department of this university is planned for the professional education of those students who have been especially fitted to receive its instructions by a course of preliminary training in the liberal arts, and especially in those branches of science, like physics, chemistry, and biology, which underlie the medical sciences. Men and women are admitted upon the same terms.

As candidates for the degree of Doctor of Medicine the school receives:

1. Those who have satisfactorily completed the Chemical-Biological course which leads to the A. B. degree in this university.
2. Graduates of approved colleges or scientific schools who can furnish evidence: (*a*) That they have a good reading knowledge of French and German; (*b*) That they have such knowledge of physics, chemistry, and biology as is imparted by the regular minor courses given in these subjects in this university.

The phrase "a minor course," as employed in this university, means a course that requires a year for its completion. In physics, four class-room exercises and three hours a week in the laboratory; in chemistry and biology four class-room exercises and five hours a week in the laboratory in each subject are required.

Many inquiries have been received regarding the character and amount of the requisite training indicated by the term "Minor Course" in these sciences. In explanation, it may be stated, with respect to Biology, that the candidate should have followed for at least a year a laboratory course in the structure, life history, and vital activities of selected types of animal and vegetable life. In the Chemical-Biological course for undergraduates in this university the laboratory work in biology at present includes the study of such types as amœba, hæmatococcus, yeast, penicillium, bacteria, mushroom, hydra, vorticella, a fern, a flowering plant, the earthworm, lobster, anodon; the gross and minute anatomy of the frog, the development of its eggs, the structure, formation, and metamorphoses of the tadpole; the study and drawing of the bones of the human skeleton; the comparison of some parts of related vertebrate skeletons; dissection of a mammal; the field and laboratory study of some few flowering plants. The laboratory work is the more important part, the lectures and other exercises subsidiary. It is, of course, not to be understood that this curriculum of biological work must be rigidly followed. Equivalent work will be accepted.

The candidate should have followed a course in general Chemistry for at least a year. This course should include laboratory work, about five hours a week through the year, and lectures and class-room work covering the outlines of inorganic chemistry and the elements of organic chemistry. A good knowledge of the subject as presented in Remsen's "Introduction to the Study of Chemistry" may be regarded as the minimum requirement. A fuller knowledge of Chemistry is, of course, desirable.

In Physics, the candidate should have followed a collegiate course for at least one year. This should include four hours a week of class-room work and at least three hours a week of quantitative work in the laboratory. Special attention should be given to theoretical mechanics and to the mechanical and electrical experiments.

3. Those who give evidence by examination that they possess the general education implied by a degree in arts or in science from an approved college or scientific school, and the knowledge of French, German, physics, chemistry, and biology above indicated.

Applicants for admission will receive blanks to be filled out relating to their previous courses of study.

They are required to furnish certificates from officers of the colleges or scientific schools where they have studied as to the courses pursued in physics, chemistry, and biology. If such certificates are satisfactory, no examination in these subjects will be required.

Candidates who have not received diplomas of the required character will be examined for admission at the beginning of the session.

No one will be admitted to advanced standing without furnishing evidence that these terms of admission as regards preliminary training have been fulfilled, and that courses equivalent in kind and amount to those given here, preceding that year of the course for admission to which application is made, have been satisfactorily completed.

Hearers, not candidates for a degree, will be received at the discretion of the Faculty.

GENERAL PLAN OF INSTRUCTION.

The course of instruction continues through four years. The academic year begins October 1 and closes about the middle of June. There are recesses at Christmas and Easter. Anatomy, including normal histology and embryology, physiology, and physiological chemistry are the principal studies of the first year. The study of anatomy and of physiology is continued in the second year, and, in addition, pharmacology, general pathology, pathological anatomy, and bacteriology are taken up. During the third year the general principles of medicine, surgery, and obstetrics are studied and clinical instruction in medicine and surgery is given. During the fourth year the practical study of these subjects is continued in combination with work in the wards of the Hospital, and the various special branches of practical medicine and surgery, such as ophthalmology, dermatology, laryngology, neurology, pædiatrics, are taught. Instruction in hygiene, psychiatry, legal medicine, and medical history will be provided during the course.

Abundant clinical material is afforded by the Johns Hopkins Hospital and Dispensary. The clinical amphitheatre and the clinical laboratories are in the Hospital buildings.

Physiology is taught in the Biological Laboratory of the University.

The Pathological Laboratory, which for the present accommodates also the department of physiological chemistry, is a four-story building on the grounds of the Hospital. This building contains the autopsy theatre, the pathological museum, and rooms for bacteriology, pathological histology, experimental pathology, physiological chemistry, and special research.

The Women's Fund Memorial Building has been erected during the past year upon a large plot of ground owned by the University near the Hospital. This is a commodious building, three stories in height, constructed for the accommodation of the various anatomical laboratories. The first story of this building is for the present occupied by the department of pharmacology.

In the main building of the Hospital is a good medical library with full sets of medical periodicals. The various special laboratories possess also appropriate libraries. These, as well as the libraries and reading room of the University, and those of the Peabody Institute, are available without charge for the use of medical students.

Practical work in the dissecting room, in the laboratory, and at the bedside, demonstrations, clinics, lectures, and recitations, form the most prominent features of the methods of instruction.

COURSES OF INSTRUCTION.

Inasmuch as for the coming year students who are candidates for the degree of Doctor of Medicine will be admitted only to the courses of the first, second, and third years, the courses of these years alone are now announced.

ANATOMY.

The instruction in Anatomy is under the charge of Dr. Franklin P. Mall, Professor of Anatomy, with the aid of Dr. Lewellys F. Barker, Associate in Anatomy, and Dr. J. Williams Lord, Instructor in Anatomy.

The course in anatomy consists of vertebrate embryology, histology and histogenesis, and human anatomy. It is recommended that the student complete the greater part of the work in anatomy during the first academic year.

The course in embryology and histology is continuous during the first year, although either course may be taken by itself.

During the autumn and winter instruction in histology is given by lectures, demonstrations, and laboratory work. In the spring, vertebrate embryology is taught. The aim of the latter course is to throw as much light as possible upon the structure and development of tissues and organs and upon human anatomy in general.

Parallel with the above course that on human anatomy is given.

Beginning in the autumn with lectures, recitations, and demonstrations in osteology, the study of human anatomy is continued with practical work in the dissecting-room as soon as cool weather sets in. The aim is to teach as much as possible of human anatomy by work in the dissecting-room and by demonstrations, leaving only certain general and special topics for the lecture-room.

The more difficult dissections, as well as the anatomy of the central nervous system, are reserved for the second year.

Applied anatomy will be taught by the professors of medicine, surgery, obstetrics, and gynecology.

The new anatomical laboratories in the Memorial Building are large enough to meet all the requirements and are fitted up with all the necessary apparatus for instruction and research in embryology, histology, and gross anatomy. Instead of one large dissecting-room, there are a number of small dissecting-rooms, which will thus afford the best opportunity for study. They are open during the whole day.

PHYSIOLOGY.

The instruction in Physiology is under the charge of Dr. William H. Howell, Professor of Physiology, assisted by Dr. George P. Dreyer, Associate in Physiology. The course extends from January 1 of the first year to January 1 of the second year.

The work consists of lectures, experimental work in the laboratory, demonstrations, recitations, and conferences. The lectures are fully illustrated by experiments and demonstrations given in the lecture-room. Weekly recitations are held upon the subject-matter covered by the lectures, and in the latter half of the year weekly conferences also form part of the class work.

The laboratory course is arranged so as to occupy six hours a week for about twelve weeks. In this course the students are required to perform the simpler experiments upon muscle, nerve, circulation, and vision, making use of the various graphic methods employed in physiology. The work is intended to give an idea of the methods used in experimental physiology, and to furnish also that basis of actual acquaintance with facts which is necessary for intelligent reading.

In addition to the foregoing exercises, which comprise the required work, students are given opportunities to participate in the more advanced courses carried on in the laboratory, and intended primarily as graduate work. These courses are as follows: A physiological journal club meets weekly to discuss the recent literature in animal physiology and histology. A physiological seminary meets weekly during the year. The object of the seminary work is to study carefully by means of lectures or readings some special part of physiology. The topics chosen vary each year. An advanced course of laboratory work is arranged,—intended to teach the methods of physiological demonstration and research. This course is under the control of the professor of physiology, and is not limited as to time or amount of work, with the exception that assistance from the professor must be arranged for by definite engagements. It is designed for those who expect to become teachers or investigators in physiology, pathology, or pharmacology, and the number permitted to take it is necessarily limited. For purposes of research the laboratory is well equipped.

PHYSIOLOGICAL CHEMISTRY.

The instruction in Physiological Chemistry is for the present under the charge of Dr. John J. Abel, Professor of Pharmacology, with the aid of Thomas B. Aldrich, Ph. D., and Edwin S. Faust, Ph. D., Assistants in Physiological Chemistry.

Instruction in this branch is given by illustrated lectures, conferences of a less formal character, and laboratory work. It continues throughout the first year of the course.

In the lectures the substances that have been isolated from the fluids and tissues of the body are considered chiefly with regard to their connection with physiological processes. The physical and chemical properties of these substances and their chemical relationships also receive due attention whenever they promise to throw light on animal metabolism, for it is thought that a treatment of the subject which emphasizes the chemical properties of the constituents of the body will best prepare the student to meet important questions that will arise later in his study of pathology, pharmacology, hygiene, and practical medicine.

The laboratory instruction covers the following ground:

1. The isolation of the more important constituents of the various tissues and fluids of the body, of its secretions and excretions in health and in disease, and the study of such of the physical and chemical properties of these constituents as are of most importance from the physiological point of view.

2. Selected qualitative and quantitative methods employed in the study of the various tissues, the products of gastric and pancreatic digestion, the urine. blood, bile, biliary and renal calculi, milk, pus, and faeces.

3. The synthetic formation of some of the constituents of the body, such as urea, uric acid, hippuric acid, cholin, leucin, etc.,—when the student has completed the work under 1 and 2.

PHARMACOLOGY AND TOXICOLOGY.

The instruction in Pharmacology is under the direction of Dr. John J. Abel, Professor of Pharmacology, with the aid of Dr. Albert C. Crawford, Assistant in Pharmacology. The instruction is given in the second year of the course by illustrated lectures and by laboratory work. Pharmacology is taught largely by the experimental method, and students will themselves arrange apparatus and perform experiments under the immediate supervision of the professor in charge.

The practical work includes such topics as the action of drugs on the heart, vessels and vasomotor apparatus, on the respiratory apparatus, brain and spinal cord, voluntary and involuntary muscles, kidneys, salivary and sweat glands, intestines, liver, etc. The chemical side of Pharmacology also receives due attention. The fate of drugs in the organism, their influence on the metabolism of the body and the manner of their excretion are fully treated in lectures and illustrated whenever possible.

A course of lectures with demonstrations in Toxicology will be given in the second half-year.

Pharmacy will also be treated in a short course of illustrative lectures.

Actual practice in prescribing and dispensing drugs and in the employment and application of the various therapeutic agents used in medicine will be offered in connection with the practical clinical work of the third and fourth years.

PATHOLOGY AND BACTERIOLOGY.

The instruction in Pathology and Bacteriology is under the charge of Dr. William H. Welch, Professsor of Pathology, with the coöperation of Dr. Simon Flexner, Associate Professor of Pathology, and of an Assistant in Bacteriology.

General and Special Pathological Anatomy and General Pathology are taught by lectures, recitations, demonstrations, and laboratory work. Instruction is given in the methods of making post-mortem examinations and of recording in proper protocols the results. These courses continue throughout the second year. The laboratory work occupies three half-days a week throughout the year.

The principal subjects in General Pathology are taught as far as practicable by actual demonstration and experiment. Gross Morbid Anatomy and Pathological Histology are studied in conjunction with each other, the description and demonstration of gross lesions being followed by the examination of the microscopical lesions. Instruction in the technique of making pathological examinations, including the methods of pathological histology, and practice in pathological diagnosis are afforded.

Bacteriology is taught by a practical laboratory course occupying nine hours a week for three months. Here the student becomes familiar with the preparation of culture media, the principles of sterilization and disinfection, the methods of cultivating, staining, and studying bacteria, the biological examination of air, water, and soil, and the important species of known pathogenic micro-organisms.

In addition to the courses for undergraduates in medicine, opportunity is afforded for advanced work and special research in Pathological Histology, Experimental Pathology, and Bacteriology. For these purposes the Pathological Laboratory is well equipped with the necessary apparatus and is provided with sufficient material.

MEDICINE.

The instruction in this department is under the charge of Dr. William Osler, Professor of Medicine, and his Associates and Assistants in this subject. The teaching will be in the Dispensary, in the Clinical Laboratory, and in the Wards. The work in the third and fourth years will be separate. In the former the subjects will be chiefly *anamnestics* and *diagnostics*. The programme for the fourth year will be announced hereafter.

The work of the third year will be as follows:

I. Demonstrations in Medical Anatomy and Physiology. These will comprise a review of the Topographical Anatomy of the viscera, and a consideration of the normal functions and physical signs of the organs in health, so far as they relate to practical medicine.

II. Instruction in History-taking. After a brief didactic introduction, the students will learn the method of history-taking by themselves obtaining the anamnesis of patients in the Dispensaries.

III. The Practical Study of the Symptoms and Signs of Disease. The work of the year will consist largely in a systematic study of the symptoms of disease. For this purpose the patients in the Medical, Neurological, and Children's Dispensaries will be utilized. The teaching will be objective and practical. The student will learn the use of the instruments of precision employed in clinical research—the Stethoscope, Microscope, Ophthalmoscope, etc.—by daily routine manipulations. Particular attention will be paid during this year to Clinical Microscopy in the study of the urine, sputum, and blood.

IV. Recitations. At stated intervals recitations will be held in which the progress of the student will be tested, and in which theoretical considerations will be discussed.

SURGERY.

The instruction in Surgery is in charge of Dr. William S. Halsted, Professor of Surgery. He will be assisted in General Surgery by Dr. J. M. T. Finney, Associate in Surgery, and by Dr. Joseph C. Bloodgood, Resident Surgeon of the Johns Hopkins Hospital.

The principal work of the third year will relate to surgical pathology and surgical diagnosis. The work will be mainly as follows:

1. A practical course on the healing of wounds. The macroscopical and microscopical appearances of the various stages of repair of wounds of the several tissues under proper and improper conditions will be considered.
2. Surgical Pathology. Pathological material from the operating rooms will regularly be assigned to students for examination.
3. Minor Surgery and Minor Genito-Urinary Surgery, including the use of the cystoscope, laryngoscope, etc., will be taught in the Dispensary.
4. Major Surgery. Students of the third year will attend the clinics in the operating room on certain days of the week.
5. Recitations will be held regularly throughout the year.

OBSTETRICS.

The instruction in Obstetrics will be given in the third and fourth years by Dr. J. Whitridge Williams, Associate in Obstetrics, assisted in the clinical work by the Obstetrical Assistants of the Hospital, as follows:

In the third year, three hours a week will be devoted to the theoretical teaching of Obstetrics, and the time will be divided between (*a*) didactic lectures, (*b*) demonstrations of the various operative procedures upon the mannikin, with practical exercises by the students, and (*c*) clinical conferences with demonstrations and recitations.

In the fourth year, the students will be divided into small groups for practical clinical instruction. Each group will be on duty for a specified length of time, which will vary according to the amount of material available. They will also be required to attend a definite number of poor women in labor at their own homes, under the supervision of an assistant or trained nurse.

When cases of marked interest occur, they will be demonstrated as far as possible to the entire class.

HISTORY AND LITERATURE OF MEDICINE.

Lectures upon this subject are given by Dr. John S. Billings.

FOURTH YEAR.

The detailed statement of the courses of the fourth year will appear in a subsequent Announcement.

EXAMINATIONS.

At the end of the first year examinations in physiological chemistry and normal histology will be held.

A practical examination in anatomy will be held in the second year shortly before the dissecting-room closes. At the end of the second year there will be examinations in physiology, pathology, bacteriology, and pharmacology. The examinations will be partly written and partly oral and will include practical tests of laboratory work. The statement regarding the examinations of the third and fourth years will be announced subsequently.

CHARGES FOR TUITION.

The charge for tuition is two hundred dollars per annum, payable at the Treasurer's office, in semi-annual instalments, October 1 and February 1. There are no extra charges for instruction in any department or for laboratory courses, except for materials consumed. A deposit of ten dollars as caution money is required from each student at the time of his enrolment. The caution money is repaid to the student when he leaves, if there are no charges against him. Special charges are made for breakage and for damage to apparatus.

Inquiries may be addressed to the Registrar of the Johns Hopkins University.

APPENDIX.

I.

THE MARY ELIZABETH GARRETT FUND.*

TERMS OF THE GIFT, AS ACCEPTED BY THE TRUSTEES, FEBRUARY 21, 1893.

Miss Mary Elizabeth Garrett, in order to make up the sum of $500,000, which the Board of Trustees required should be secured as an endowment before the Medical School of the University was opened, has contributed to that fund the sum of $306,977 upon the following terms, which have been agreed to by the University:

1. That women shall enjoy all the advantages of the Medical School of the Johns Hopkins University on the same terms as men, and shall be admitted on the same terms as men to all prizes, dignities or honors that are awarded by competition, examination or regarded as rewards of merit.

2. That not more than $50,000 of the original endowment of $500,000 shall be expended on a building or buildings; and that in memory of the contributions of the Committees of the Women's Medical School Fund, this building, if there be but one, or the chief building, if there be more than one, shall be known as the Women's Fund Memorial Building.

3. That the Medical School of the University shall be exclusively a graduate school as hereinafter explained, that is to say: That the Medical School of the Johns Hopkins University shall form an integral part of the Johns Hopkins University, and like other departments of the University, shall be under the management and control of the Trustees of the said University; that it shall provide a four years' course, leading to the degree of Doctor of Medicine; that there shall be admitted to the School those students only who by examination or by other tests equally satisfactory to the Faculty of the Medical School (no distinction being made in these tests or examinations between men and women), have proved that they have completed the studies included in the Preliminary Medical Course (Group Three, Chemical-Biological Course) as laid down in the University Register (but this condition is not meant to restrict the Trustees from receiving as hearers, but not as candidates for the degree of Doctor of Medicine, those who have received the degree of Doctor of Medicine, or its equivalent, in some school

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* So designated by the Trustees, December 24, 1892.

of good repute); and that the degree of Doctor of Medicine of the Johns Hopkins University shall be given to no Doctors of Medicine who have not proved by examination or by other tests equally satisfactory to the Faculty of the Medical School that they have completed the studies included in the Preliminary Course, besides completing the course of instruction of the Medical School of the Johns Hopkins University.

The aforegoing provisions shall not be construed as restricting the liberty of the University to make such changes in the requirements for the admission to the Medical School of the Johns Hopkins University or to accept such equivalents for the studies required for admission to this school as shall not lower the standard of admission specified in this clause: provided that the requirements in modern languages other than English shall not be diminished, and provided also that the requirements in non-medical scientific studies shall include at least as much knowledge of natural science as is imparted in the three minor courses in science now laid down in its university register, the subjects and arrangements of these scientific studies being subject to such modifications as may from time to time seem wise to its Board and to the Faculty of the Medical School, but being at all times the same for all candidates for admission. (For such requirements always see University Register.)

4. That the terms of this gift and the Resolutions of October 28th, 1890, by which the Trustees accepted the gift of the Women's Medical School Fund, shall be printed each year in whatever annual calendars may be issued announcing the courses of the Medical School.—See appended Resolutions.

5. That there shall be created a committee of six women to whom the women studying in the Medical School may apply for advice concerning lodging and other practical matters, and that all questions concerning the personal character of women applying for admission to the School, and all non-academic questions of discipline affecting the women studying in the Medical School shall be referred to this committee, and by them be in writing reported for action to the authorities of the University; that the members of this committee shall be members for life; that the committee, when once formed, shall be self-nominating, its nominations of new members to fill such vacancies as may occur being subject always to the approval of the Board of Trustees of the University.

6. That in the event of any violation of any or all of the aforesaid stipulations, the said sum of $306,977 shall revert to her, or such person or persons, institution or institutions, as she by testament or otherwise may hereafter appoint.

It will be observed that by the tenor of the aforegoing terms no university course will be in any way modified by any conditions attached to her gift. Those conditions relate exclusively to preparation for the Medical School, and have received, in the shape in which they are now presented, the unanimous approval of the Medical Faculty of the University.

The terms of admission to the Medical School of the University as formulated and interpreted by the Medical Faculty of the University, February 4, 1893, and here subjoined, are therefore in entire accordance with the terms of her gift.

(Signed) MARY E. GARRETT.

REQUIREMENTS FOR ADMISSION TO THE MEDICAL SCHOOL OF THE JOHNS HOPKINS UNIVERSITY, UNANIMOUSLY APPROVED BY THE MEDICAL FACULTY, FEBRUARY 4, 1893.

A course of four years' instruction will be provided leading to the degree of Doctor of Medicine.

To this course there will be admitted as candidates for the degree:

1. Those who have satisfactorily completed the Chemical-Biological Course which leads to the A. B. Degree in this University.
2. Graduates of approved Colleges or Scientific Schools who can furnish evidence: (*a*) That they have a good reading knowledge of French and German; (*b*) That they have such knowledge of Physics, Chemistry and Biology as is imparted by the regular Minor Courses given in these subjects in this University.
3. Those who give evidence by examination that they possess the general education implied by a degree in arts or in science from an approved College or Scientific School, and the knowledge of French, German, Physics, Chemistry and Biology, already indicated.

By approved Colleges and Scientific Schools are meant those whose standard for graduation shall be considered by this University as essentially equivalent to its standard for graduation in the undergraduate department.

It is to be understood that at least one year's study in the Chemical and Biological Sciences in their immediate relations to medicine shall be required from students after their entrance to the medical school.

II.

THE WOMEN'S MEDICAL SCHOOL FUND.

At a meeting of the Board of Trustees of the University, October 28, 1890, the following letter was presented:

"The committees formed for the purpose of raising a fund to procure the most advanced medical education for women, can now place at your disposal the sum of one hundred thousand dollars for the use of your medical school, if you will, by resolution, agree that women whose previous training has been equivalent to your preliminary medical course, shall be admitted to the school, when it shall open, upon the same terms which may be prescribed for men. There can be no doubt that women ought to be trained to act as nurses for sick women. There is as little doubt that a sufficient number of women ought to be educated and trained in such manner as to be fully able to care for sick women who may wish or ought to be treated by women. We have devoted ourselves to the furtherance of this object. We have reason to hope that a university which proposes to found a medical school intended to teach advanced methods in the treatment of those diseases which afflict mankind, will not refuse to women the opportunity of learning such methods. There is now a general interest in our movement. In order that this interest may be sustained we ask you to consider our offer at the earliest possible period.

NANCY MORRIS DAVIS,
Chairman of the Baltimore Committee."

The following minute was adopted by the Trustees:

The President and Board of Trustees of the Johns Hopkins University have received from Mrs. Nancy Morris Davis, chairman of one of the committees formed for the purpose of raising a fund to procure the most advanced medical education for women, the gratifying intelligence that $100,000 has been raised for the use of their intended Medical School, and is at their disposal, if they will, by resolution, agree to the terms upon which the money was contributed by its donors.

These terms are that this Board, if it accepts the funds thus raised, shall agree, by resolution, that, when its Medical School shall be opened, women whose training has been equivalent to the preliminary medical course prescribed for men, shall be admitted to such school upon the same terms as may be prescribed for men.

The offer to this University of the particular fund is the free voluntary act of women residing in this State and in other states, made without the suggestion or solicitation of this Board, and we accept it under and subject to the terms which are made a part of the gift, with the understanding and declaration, however, that such preliminary training in all its parts shall be obtained in some other institution of learning devoted, in whole or in part, to the education of women, or by private tuition.

The fund so contributed shall be invested and known as "The Women's Medical School Fund," and that fund, and all interest to accrue thereon, and all additions made thereto for the same purpose, shall remain invested for the purposes of increase only until, with its aid as a foundation, a general fund has been accumulated amounting to not less than $500,000, and sufficient for the establishment and maintenance of a Medical School worthy of the reputation of this University and fully sufficient as a means of complete medical instruction. Then, and not until then, will a Medical School be opened by this University; and then, and not until then, will the gift now offered be used by this University; and then, and not until then, will the terms attached thereto be operative.

The utility of a training school for women nurses has been demonstrated by the experience and practice of the Johns Hopkins Hospital, and by the necessities of home life among our people.

This Board is satisfied that in hospital practice among women, in penal institutions in which women are prisoners, in charitable institutions in which women are cared for, and in private life, when women are to be attended, there is a need and place for learned and capable women physicians; and that it is the business and duty of this Board, when it is supplied with the necessary means for opening its proposed Medical School, to make provision for the training and full qualification of such women for the abundant work which awaits them in these wide fields of usefulness.

Nothing contained in this minute shall be construed as abridging, in any manner, the right of the Board of Trustees of the Johns Hopkins University to make such rules and regulations as they may deem necessary for the government of its School of Medicine, when it is organized; and in making such rules and regulations, the terms of this minute shall always be respected and observed.

WOMEN'S COMMITTEE OF THE MEDICAL SCHOOL, APPOINTED BY MISS GARRETT, DECEMBER 22, 1892.

Their duties are stated in paragraph 5 of the letter printed above.

MRS. HENRY M. HURD,
MRS. IRA REMSEN,
MRS. WILLIAM OSLER,
MISS M. CAREY THOMAS,
MISS MARY M. GWINN,
MISS MARY E. GARRETT.

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THE
JOHNS HOPKINS
MEDICAL SCHOOL

ESTABLISHED BY THE JOHNS HOPKINS UNIVERSITY
IN CONNECTION WITH THE JOHNS HOPKINS HOSPITAL
BALTIMORE, MARYLAND

FOURTH ANNUAL ANNOUNCEMENT
1896–97

THE JOHNS HOPKINS PRESS
BALTIMORE
1896

TRUSTEES OF THE JOHNS HOPKINS UNIVERSITY.

C. Morton Stewart,
President.

Francis White,
Treasurer.

Lewis N. Hopkins,
Secretary.

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Francis White,
James Carey Thomas,
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Alan P. Smith,
Robert Garrett,
James L. McLane,
W. Graham Bowdoin,
William T. Dixon,
Benjamin F. Newcomer,
The President of the University, *ex officio.*

TRUSTEES OF THE JOHNS HOPKINS HOSPITAL.

William T. Dixon,
President.

Joseph P. Elliott,
Vice-President.

Lewis N. Hopkins,
Secretary.

Francis White,
Lewis N. Hopkins,
Alan P. Smith,
Joseph P. Elliott,
George W. Corner,
C. Morton Stewart,
William T. Dixon,
John E. Hurst,
James L. McLane,
Charles F. Mayer,
John A. Whitridge,
Henry D. Harlan.

FACULTY.

The names are arranged in the several groups in the order in which the members of the staff assumed their duties.

PRESIDENT.

DANIEL C. GILMAN, LL. D.

A. B., Yale College, 1852, and A. M., 1855; LL. D., Harvard University, 1876, St. John's College, 1876, Columbia College, 1887, Yale University, 1889, and University of North Carolina, 1889; Professor in Yale College, 1856–72; President of the University of California, 1872–75; Corresponding Member of the British Association for the Advancement of Science.

PROFESSORS.

WILLIAM H. WELCH, M. D., LL. D.

Professor of Pathology and Dean.

A. B., Yale College, 1870; M. D., College of Physicians and Surgeons (N. Y.), 1875; Hon. M. D., University of Pennsylvania, 1894; LL. D., Western Reserve University, 1894; Professor of Pathological Anatomy and General Pathology in the Bellevue Hospital Medical College, N. Y., 1879–84; President of the Medical and Chirurgical Faculty of Maryland, 1891–92; *Pathologist to the Johns Hopkins Hospital; Editor of the Journal of Experimental Medicine.*

IRA REMSEN, M. D., PH. D., LL. D.

Professor of Chemistry.

A. B., College of the City of New York, 1865; M. D., College of Physicians and Surgeons, N. Y., 1867; Ph. D., University of Göttingen, 1870; LL. D., Columbia College, 1893; Professor of Chemistry in Williams College, 1872–76, and previously Assistant in Chemistry in the University of Tübingen; Corresponding Member of the British Association for the Advancement of Science; *Editor of the American Chemical Journal.*

WILLIAM OSLER, M. D., F. R. C. P.

Professor of the Principles and Practice of Medicine.

M. D., McGill University, 1872; Fellow of the Royal College of Physicians, London; Professor of the Institutes of Medicine, McGill University, Montreal, 1874–84; Professor of Clinical Medicine, University of Pennsylvania, 1884–89; President of the Medical and Chirurgical Faculty of Maryland; *Physician in Chief to the Johns Hopkins Hospital; Associate Editor of the Journal of Experimental Medicine.*

HENRY M. HURD, M. D., LL. D.

Professor of Psychiatry.

A. B., University of Michigan, 1863, M. D., 1866, A. M., 1870, and LL. D., 1895; Superintendent of the Eastern Michigan Asylum, 1878–89; *Editor of the Johns Hopkins Hospital Reports, the Bulletin of the Johns Hopkins Hospital, and the American Journal of Insanity; Superintendent of the Johns Hopkins Hospital.*

WILLIAM S. HALSTED, M. D.

Professor of Surgery.

A. B., Yale College, 1874; M. D., College of Physicians and Surgeons (New York), 1877; formerly Attending Surgeon to the Presbyterian and Bellevue Hospitals, Associate Surgeon to Roosevelt Hospital, and Surgeon in Chief to the Emigrant Hospital, New York; *Surgeon in Chief to the Johns Hopkins Hospital.*

HOWARD A. KELLY, M. D.

Professor of Gynecology and Obstetrics.

A. B., University of Pennsylvania, 1877, and M. D., 1882; Associate Professor of Obstetrics, University of Pennsylvania, 1888–89; *Gynecologist and Obstetrician to the Johns Hopkins Hospital.*

FRANKLIN P. MALL, M. D.

Professor of Anatomy.

M. D., University of Michigan, 1883; Fellow of the Johns Hopkins University, 1886–88, and Assistant in Pathology, 1888–89; Adjunct Professor of Anatomy, Clark University, 1889–92; Professor of Anatomy, University of Chicago, 1892–93.

JOHN J. ABEL, M. D.

Professor of Pharmacology.

Ph. B., University of Michigan, 1883; Graduate Student, Johns Hopkins University, 1883–84; M. D., University of Strassburg, 1888: Professor of Materia Medica and Therapeutics, University of Michigan, 1891–93; *Associate Editor of the Journal of Experimental Medicine.*

WILLIAM H. HOWELL, PH. D., M. D.

Professor of Physiology.

A. B., Johns Hopkins University, 1881; Fellow, 1882–84, Ph. D., 1884; Assistant in Biology, 1884–85, Associate, 1885–88, and Associate Professor, 1888–89; Lecturer, University of Michigan, 1889–90, M. D., 1890, and Professor of Physiology and Histology, 1890–92; Associate Professor of Physiology, Harvard University, 1892–93; *Associate Editor of the Journal of Experimental Medicine.*

WILLIAM K. BROOKS, PH. D., LL. D.

Professor of Comparative Anatomy and Zoölogy.

A. B., Williams College, 1870, and LL. D., 1893; Ph. D., Harvard University, 1875; Fellow, Johns Hopkins University, 1876, Associate, 1876–83, and Associate Professor, 1883–91; Fellow, Royal Microscopical Society of London; *Editor of the Memoirs from the Biological Laboratory.*

CLINICAL PROFESSORS.

WILLIAM D. BOOKER, M. D.

Clinical Professor of Diseases of Children.

M. D., University of Virginia, 1867; Graduate Student, Johns Hopkins University, 1876–79; Attending Physician, Wilson Sanitarium, Baltimore; *Associate in Pediatrics, Johns Hopkins Hospital and Dispensary.*

JOHN N. MACKENZIE, M. D.

Clinical Professor of Laryngology.

M. D., University of Virginia, 1876, and University of the City of New York, 1877; Student, Johns Hopkins University, 1882–83, and Universities of Munich and Vienna, 1882; Clinical Professor in the University of Maryland; American Editor of the International Journal of Laryngology and Rhinology; President, American Laryngological Association, 1889; Corresponding Fellow of the Laryngological, Rhinological, and Otological Society of France; *Laryngologist, Johns Hopkins Hospital and Dispensary.*

SAMUEL THEOBALD, M. D.

Clinical Professor of Ophthalmology and Otology.

M. D., University of Maryland, 1867; Student in Vienna and London; Associate Editor, American Journal of Ophthalmology; *Ophthalmic and Aural Surgeon, Johns Hopkins Hospital.*

HENRY M. THOMAS, M. D.

Clinical Professor of Diseases of the Nervous System.

M. D., University of Maryland, 1884; Student, Johns Hopkins University, 1879–84, 1886–87, and University of Heidelberg, 1885–86; *Assistant, Johns Hopkins Hospital and Dispensary.*

LECTURER.

JOHN S. BILLINGS, M. D., LL. D.

Lecturer on the History and Literature of Medicine.

A. B., Oxford College (Ohio), 1857, and A. M., 1860; M. D., University of Cincinnati, 1860; LL. D., University of Edinburgh, 1884, Harvard University, 1886; D. C. L., University of Oxford, 1889; Hon. M. D., University of Dublin, 1892; Deputy Surgeon-General, U. S. Army (*retired*); Director of the Laboratory of Hygiene, University of Pennsylvania, 1895–96; Superintendent of the New York Public Library.

ASSOCIATE PROFESSORS.

SIMON FLEXNER, M. D.

Associate Professor of Pathology.

M. D., University of Louisville, 1889; Graduate Student in the Johns Hopkins University, 1890–91, Fellow in Pathology, 1891–92, and Associate in Pathology, 1892–95; *Resident Pathologist, Johns Hopkins Hospital.*

J. WHITRIDGE WILLIAMS, M. D.

Associate Professor of Obstetrics.

A. B., Johns Hopkins University, 1886; M. D., University of Maryland, 1888; *Associate in Obstetrics, Johns Hopkins Hospital.*

ASSOCIATES, INSTRUCTORS, AND ASSISTANTS.

JOHN M. T. FINNEY, M. D.

Associate in Surgery.

A. B., Princeton College, 1884; M. D., Harvard University, 1888; *Associate in Surgery, Johns Hopkins Hospital.*

LEWELLYS F. BARKER, M. B.

Associate in Anatomy.

M. B., University of Toronto, 1890; Fellow in Pathology, Johns Hopkins University, 1892–94; *Assistant Resident Pathologist, Johns Hopkins Hospital.*

GEORGE P. DREYER, PH. D.

Associate in Physiology.

A. B., Johns Hopkins University, 1887, Fellow in Biology, 1889–90, and Ph. D., 1890.

WILLIAM S. THAYER, M. D.

Associate in Medicine.

A. B., Harvard University, 1885, and M. D., 1889; *Resident Physician, Johns Hopkins Hospital.*

J. WILLIAMS LORD, M. D.

Associate in Dermatology and Instructor in Anatomy.

A. B., Johns Hopkins University, 1884; M. D., University of Pennsylvania, 1887; *Dermatologist to the Johns Hopkins Hospital and Dispensary.*

HENRY J. BERKLEY, M. D.

Associate in Neuro-Pathology.

M. D., University of Maryland, 1881; Student, Johns Hopkins University, 1889–91, 1893–94, and in London and Vienna, 1883–85, 1886–87; Attending Physician to the City Asylum at Bay View.

THOMAS C. GILCHRIST, M. B.

Associate in Dermatology.

M. B., University of London, 1886; M. R. C. S., London; L. S. A., London; *Dermatologist to the Johns Hopkins Hospital and Dispensary.*

ROBERT L. RANDOLPH, M. D.

Associate in Ophthalmology and Otology.

M. D., University of Maryland, 1884; Student, Johns Hopkins University, 1881–82, 1887–92; *Associate Ophthalmic and Aural Surgeon to the Johns Hopkins Hospital and Dispensary.*

WILLIAM W. RUSSELL, M. D.

Associate in Gynecology.

M. D., University of Pennsylvania, 1890; Resident Gynecologist, Johns Hopkins Hospital, 1894–95.

THOMAS B. ALDRICH, PH. D.

Instructor in Physiological Chemistry.

Ph. D., University of Jena, 1891, and Assistant in Chemistry, Jena, 1891–92.

JOSEPH C. BLOODGOOD, M. D.

Instructor in Surgery.

S. B., University of Wisconsin, 1883; M. D., University of Pennsylvania, 1891; *Resident Surgeon, Johns Hopkins Hospital.*

THOMAS S. CULLEN, M. B.

Instructor in Gynecology.

M. B., University of Toronto, 1890; *Assistant in Gynecology, Johns Hopkins Hospital.*

THOMAS B. FUTCHER, M. B.

Instructor in Medicine.

M. B., University of Toronto, 1893; Assistant Resident Physician, Johns Hopkins Hospital, 1894–95.

ADOLPH G. HOEN, M. D.

Instructor in Photo-Micrography.

M. D., University of Maryland, 1872.

FRANK R. SMITH, M. D.

Instructor in Medicine.

A. M., University of Cambridge (England), 1882; M. D., University of Maryland, 1891; Assistant Resident Physician, Johns Hopkins Hospital, 1891–93; *Chief of Medical Clinic, Johns Hopkins Dispensary.*

ALBERT C. CRAWFORD, M. D.

Assistant in Pharmacology.

M. D., College of Physicians and Surgeons (Balt.), 1893; Student, Johns Hopkins University, 1887–90, 1891–94.

GEORGE BLUMER, M. D.

Assistant in Pathology.

M. D., Cooper Medical College, 1891; Assistant Resident Surgeon, Johns Hopkins Hospital, 1893–94, and Assistant Resident Physician, 1894–95.

Assistant in Bacteriology.

GEORGE W. DOBBIN, M. D.

Assistant Demonstrator of Obstetrics.

A. B., Johns Hopkins University, 1891; M. D., University of Maryland, 1894; *Assistant Resident Obstetrician, Johns Hopkins Hospital.*

SIDNEY M. CONE, M. D.

Assistant in Surgical Pathology.

A. B., Johns Hopkins University, 1890; M. D., University of Pennsylvania, 1893; Assistant Resident Surgeon, Johns Hopkins Hospital, 1894–95.

STUDENTS, 1895-96.

CANDIDATES FOR THE DEGREE OF M. D.

Third Year.

CHARLES RUSSELL BARDEEN. A. B., Harvard University, 1893.	Syracuse, N. Y.	412 *N. Broadway.*
THOMAS RICHARDSON BROWN. A. B., Johns Hopkins University, 1892.	Baltimore.	1033 *Cathedral St.*
CORNELIA CHAPEL CHURCH. A. B., Smith College, 1888.	Pasadena, Cal.	135 *Jackson Place.*
WALTER S. DAVIS. S. B., Amherst College, 1893.	Minneapolis, Minn.	935 *N. Calvert St.*
LESTER WIGGINS DAY. Ph. B., Yale University, 1893.	Baltimore.	47 *W. Mt. Royal Av.*
LOUIS PHILIP HAMBURGER. A. B., Johns Hopkins University, 1893.	Baltimore.	1501 *Eutaw Place.*
GUY LE ROY HUNNER. S. B., University of Wisconsin, 1893.	Madison, Wis.	132 *Jackson Place.*
IRVING PHILLIPS LYON. A. B., Yale University, 1893.	Hartford, Conn.	910 *N. Calvert St.*
WILLIAM GEORGE MACCALLUM. A. B., University of Toronto, 1894.	Dunnville, Ont.	225 *E. Biddle St.*
CHARLES NEIL MCBRYDE. S. B., University of South Carolina, 1891; M. S., Virginia Agricultural and Mechanical College, 1892.	Blacksburg, Va.	1203 *Bolton St.*
WILLIAM WATSON MCCULLOH. A. B., Johns Hopkins University, 1889.	Baltimore.	929 *McCulloh St.*
JAMES FARNANDIS MITCHELL. A. B., Johns Hopkins University, 1891.	Baltimore.	1013 *Cathedral St.*
JOSEPH LONGWORTH NICHOLS. A. B., Harvard University, 1893.	Cincinnati, O.	225 *E. Biddle St.*
EUGENE LINDSAY OPIE. A. B., Johns Hopkins University, 1893.	Baltimore.	219 *W. Monument St.*
MARY SECORD PACKARD. A. B., Vassar College, 1892; Harvard Summer School, 1893.	Bayonne, N. J.	812 *St. Paul St.*
OMAR BORTON PANCOAST. S. B., Swarthmore College, 1893.	Woodstown, N. J.	132 *Jackson Place.*
CLEMENT ANDARIESE PENROSE. A. B., Johns Hopkins University, 1893.	Baltimore.	1318 *N. Charles St.*
RICHARD PEARSON STRONG. Ph. B., Yale University, 1893.	Baltimore.	*Fort McHenry.*

Second Year.

William Stevenson Baer. Baltimore. *24 N. Broadway.*
A. B., Johns Hopkins University, 1894.

Thomas Pumphrey Benson. Wellham's X Roads. *Wellham's X Roads.*
A. B., Johns Hopkins University, 1894.

William Jephtha Calvert. Lexington, Ky. *The Albany.*
A. B., University of Kentucky, 1893; Graduate Student, Kentucky State College, 1893–94.

Patrick Joseph Cassidy. Norwich, Conn. *432 N. Broadway.*
A. B., Yale University, 1894.

John Williams Coe, Jr. Meriden, Conn. *127 Jackson Place.*
Ph. B., Yale University, 1893.

Walter Cox. Bel Alton. *1703 E. Madison St.*
A. B., Johns Hopkins University, 1894.

Percy Millard Dawson. Montreal, Canada. *The Altamont.*
A. B., Johns Hopkins University, 1894.

Arthur Wells Elting. Upper Red Hook, N. Y. *412 N. Broadway.*
A. B., Yale University, 1894.

William Weber Ford. Norwalk, O. *912 N. Calvert St.*
A. B., Adelbert College, 1893.

Thomas Wood Hastings. Morristown, N. J. *919 N. Charles St.*
A. B., Johns Hopkins University, 1894.

Alfred Birch Herrick. Amsterdam, N. Y. *1727 Fairmount Av.*
A. B., Williams College, 1894.

Mary Margaret Sewall Johnstone. Newburyport, Mass.
A. B., Smith College, 1894; Harvard Summer School, 1894. *417 N. Charles St.*

James Hall Mason Knox, Jr. New Haven, Conn. *13 E. Preston St.*
A. B., Yale University, 1892, and Ph. D., 1894.

Millard Langfeld. Baltimore. *2226 Eutaw Place.*
A. B., Johns Hopkins University, 1893.

Leona Lebus. Los Angeles, Cal. *135 Jackson Place.*
S. B., Wellesley College, 1889.

Gertrude Light. Milwaukee, Wis. *711 St. Paul St.*
S. B., University of Wisconsin, 1894.

Frank Allemong Lupton. Auburn, Ala. *806 N. Broadway.*
S. B., Alabama Polytechnic Institute, 1891, and M. S., 1892; Graduate Student, Johns Hopkins University, October to January, 1893–94.

James Daniel Madison. Mazomanie, Wis. *127 Jackson Place.*
S. B., University of Wisconsin, 1894.

Harry Taylor Marshall. Baltimore. *1209 St. Paul St.*
A. B., Johns Hopkins University, 1894.

Delia Maria O'Connell. Marlborough, Mass. *806 N. Broadway.*
A. B., Vassar College, 1893; Graduate Student, Mass. Institute of Technology, 1893–94.

Roger Griswold Perkins. Schenectady, N. Y. *1128 McCulloh St.*
A. B., Union College, 1893, and Harvard University, 1894.

Katherine Porter. Baltimore. *2100 N. Calvert St.*
A. B., Bryn Mawr College, 1894.

JOSEPH HERSEY PRATT. Ph. B., Yale University, 1894.	North Middleboro, Mass.	112 *Jackson Place.*
GEORGIANA SANDS. A. B., Vassar College, 1893; Graduate Student, Barnard College (N. Y.), 1893-94.	Port Chester, N. Y.	812 *St. Paul St.*
BENJAMIN ROBINSON SCHENCK. A. B., Williams College, 1894.	Syracuse, N. Y.	806 *N. Broadway.*
HARRY MERRIMAN STEELE. Ph. B., Yale University, 1894.	Waterbury, Conn.	*The Albany.*
WALTER RALPH STEINER. A. B., Yale University, 1892, and A. M., 1895; Graduate Student, Johns Hopkins University, 1892-94.	Baltimore.	1038 *N. Eutaw St.*
EMMA ELIZABETH WALKER. A. B., Smith College, 1887.	Parkersburg, W. Va.	417 *N. Charles St.*
ANDREW HENDERSON WHITRIDGE. S. B., Harvard University, 1894.	Baltimore.	18 *W. Read St.*
KATHERINE MARGARET WOLFE. B. L. and S. B., Adrian College (Mich.), 1889; Graduate Student, Yale and Chicago Universities, 1892-94.	Tiffin, O.	514 *N. Broadway.*

(30)

First Year.

LAWRASON BROWN. A. B., Johns Hopkins University, 1895.	Baltimore.	1517 *Bolton St.*
EDWARD ERLE BROWNELL. Ph. B., Yale University, 1895.	Woodland, Cal.	935 *St. Paul St.*
HUMPHREY WARREN BUCKLER. A. B., Johns Hopkins University, 1895.	Baltimore.	806 *Cathedral St.*
FRANK CURTISS DAVIS. A. B., Amherst College, 1895.	Minneapolis, Minn.	935 *N. Calvert St.*
JOHN STAIGE DAVIS. Ph. B., Yale University, 1895.	Sault Ste Marie, Mich.	517 *Cathedral St.*
CHARLES PHILLIPS EMERSON. A. B., Amherst College, 1894.	Methuen, Mass.	103 *Jackson Place.*
BLANCH N. EPLER. S. B., University of California, 1895.	Oakland, Cal.	125 *E. North Av.*
JOSEPH ERLANGER. S. B., University of California, 1895.	San Francisco, Cal.	1640 *E. Fayette St.*
PHILIP SAFFERY EVANS, JR. A. B., Yale University, 1895.	Baltimore.	1009 *Cathedral St.*
RICHARD HOLDEN FOLLIS, JR. Ph. B., Yale University, 1895.	San Francisco, Cal.	517 *Cathedral St.*
FRANK TAYLOR FULTON. S. B., Knox College, 1894; A. B., Johns Hopkins University, 1895.	Warsaw, Ill.	127 *Jackson Place.*
JAMES DATON GALLAGHER. A. B., Johns Hopkins University, 1895.	Steubenville, O.	112 *Jackson Place.*
HENRY HARRIS. A. B., Leland Stanford Jr. University, 1895.	Olympia, Wash.	521 *N. Wolfe St.*
CHARLES HERRMANN. S. B., University of Wisconsin, 1895.	Sterling, Ill.	814 *N. Broadway.*

Henry Joseph Hoye. A. B., Brown University, 1895.	Providence, R. I.	516 *N. Broadway.*
Kate McClure Johnson. Ph. B., University of Wooster, 1891.	Wooster, O.	806 *N. Broadway.*
Louis Williams Ladd. A. B., Yale University, 1895.	New Haven, Conn.	412 *N. Broadway.*
Charles Sumner Little. A. B., Wabash College, 1894.	Evansville, Ind.	110 *E. Madison St.*
John Arthur Luetscher. S. B., University of Wisconsin, 1895.	Sauk City, Wis.	127 *Jackson Place.*
Annie Galloway Lyle. A. B., Leland Stanford Jr. University, 1895.	San Francisco, Cal.	213 *W. Monument St.*
Frank Worthington Lynch. A. B., Adelbert College, 1895.	Cleveland, O.	112 *Jackson Place.*
Hugh Miller Moore. S. B. and M. S., Miami University, 1895.	Oxford, O.	1010 *N. Broadway.*
Edward Spiller Oliver. A. B., Johns Hopkins University, 1895.	Baltimore.	1725 *Bolton St.*
Charles Williams Ottley. A. B., Princeton College, 1893.	Atlanta, Ga.	1727 *Fairmount Av.*
Paul Octavius Owsley. Ph. B., Yale University, 1895.	Chicago, Ill.	517 *Cathedral St.*
Jacob Hall Pleasants, Jr. A. B., Johns Hopkins University, 1895.	Baltimore.	606 *Cathedral St.*
Sylvan Rosenheim. A. B., Johns Hopkins University, 1895.	Baltimore.	521 *N. Wolfe St.*
John Albertson Sampson. A. B., Williams College, 1895.	Troy, N. Y.	103 *Jackson Place.*
Halbert Severin Steensland. S. B., University of Wisconsin, 1895.	Madison, Wis.	814 *N. Broadway.*
William Ridgely Stone. A. B., Princeton College, 1895.	Washington, D. C.	113 *W. Mulberry St.*
Edgar Randolph Strobel. A. B., Johns Hopkins University, 1895.	Baltimore.	1713 *E. Baltimore St.*
Frederick Herman Verhoeff. Ph. B., Yale University, 1895.	Louisville, Ky.	935 *St. Paul St.*
William Whitridge Williams. A. B., Johns Hopkins University, 1895.	Baltimore.	1128 *Cathedral St.*
Charlotte Augusta Wolcott. A. B., Smith College, 1886.	Longmeadow, Mass.	812 *St. Paul St.*
Sarah Delia Wyckoff. S. B., Wellesley College, 1894.	Dayton, O.	1910 *E. Madison St.*
Lawrence Yates. Ph. B., Yale University, 1894; S. B., University of Wisconsin, 1895.	Milwaukee, Wis.	935 *St. Paul St.*

(36)

ENDOWMENT.

The Medical Department of the Johns Hopkins University was opened for the instruction of students October 2, 1893.

The founder of the Johns Hopkins University, in devoting his large fortune to the establishment of the university and the hospital, had in view the organization of a school of medicine. In his letter addressed to the Trustees of the hospital, dated March 10th, 1873, these significant words occur:

"It will be your especial duty to secure, for the service of the hospital, surgeons and physicians of the highest character and greatest skill. . . . In all your arrangements in relation to this hospital, you will bear constantly in mind that it is my wish and purpose that the institution shall ultimately form a part of the Medical School of the University for which I have made ample provision by my will."

When the University was opened in 1876, arrangements were made for instruction in those sciences, such as physics, chemistry, and biology, which lead up naturally to the professional study of medicine. In 1884 the professorship of pathology was filled and the pathological laboratory was opened. In 1889 the Johns Hopkins Hospital was opened, and the physician, surgeon, and gynecologist in chief to the hospital were appointed to the professorships respectively of medicine, surgery, and gynecology and obstetrics. At the same time the professor of psychiatry was appointed. Opportunities for instruction were afforded to graduates in medicine. Ampler endowment, however, was needed to complete the organization of a medical department.

Gifts amounting to $111,731.68, most of which were offered to this University in October, 1890, by a committee of women, and an additional gift of $306,977, offered to the University in December, 1892, in addition to her previous subscriptions, by Miss Mary Elizabeth Garrett, made up, with other available resources, the amount of $500,000, which had been agreed upon by the Trustees as the minimum endowment of the Medical Department. These contributions were made upon condition that women be received upon the same terms as men. This endowment enabled the Trustees to complete the organization of the Medical Department and to open it for instruction in 1893.

The School of Medicine is an integral part of and under the direction of the Johns Hopkins University. It derives great advantages from its close affiliation with the Johns Hopkins Hospital.

REQUIREMENTS FOR ADMISSION.

The Medical Department of this University is planned for the professional education of those students who have been especially fitted to receive its instructions by a course of preliminary training in the liberal arts, and in those branches of science, such as physics, chemistry, and biology, which underlie the medical sciences. Men and women are admitted upon the same terms.

As candidates for the degree of Doctor of Medicine the school receives:

1. Those who have satisfactorily completed the Chemical-Biological course which leads to the A. B. degree in this university.
2. Graduates of approved colleges or scientific schools who can furnish evidence: (*a*) That they have acquaintance with Latin and a good reading knowledge of French and German; (*b*) That they have such knowledge of physics, chemistry, and biology as is imparted by the regular minor courses given in these subjects in this university.

The phrase "a minor course," as employed in this university, means a course that requires a year for its completion. In physics, four class-room exercises and three hours a week in the laboratory are required; in chemistry and biology four class-room exercises and five hours a week in the laboratory in each subject.

Many inquiries have been received regarding the character and amount of the requisite training indicated by the term "Minor Course" in these sciences. In explanation, it may be stated, with respect to Biology, that the candidate should have followed for at least a year a laboratory course in the structure, life history, and vital activities of selected types of animal and vegetable life. In the Chemical-Biological course for undergraduates in this university the laboratory work in biology at present includes the study of such types as amœba, hæmatococcus, yeast, penicillium, bacteria, mushroom, hydra, vorticella, a fern, a flowering plant, the earthworm, lobster, anodon; the gross and minute anatomy of the frog, the development of its eggs, the structure, formation, and metamorphoses of the tadpole; the study and drawing of the bones of the human skeleton; the comparison of some parts of related vertebrate skeletons; dissection of a mammal; the field and laboratory study of some few flowering plants. The laboratory work is the more important part, the lectures and other exercises subsidiary. It is, of course, not to be understood that this curriculum of biological work must be rigidly followed. Courses in botany and in zoölogy will be accepted as equivalent to the minor course in biology in this university, provided the work in the laboratory has been adequate. It is important that the candidate should show ability to observe natural objects, to record the observations in words and by drawings, and to use the microscope.

The candidate should have followed a course in general Chemistry for at least a year. This course should include laboratory work, about five hours a week through one year, and lectures and class-room work covering the outlines of inorganic chemistry and the elements of organic chemistry. A good knowledge of the subject as presented in Remsen's "Introduction to the Study of Chemistry" may be regarded as the minimum requirement. A fuller knowledge of Chemistry is, of course, desirable.

In Physics, the candidate should have followed a collegiate course for at least one year. This should include four hours a week of class-room work and at least three hours a week of quantitative work in the laboratory. Special attention should be given to theoretical mechanics and to the mechanical and electrical experiments.

3. Those who give evidence by examination that they possess the general education implied by a degree in arts or in science from an approved college or scientific school, and the knowledge of French, German, Latin, physics, chemistry, and biology above indicated.

Applicants for admission will receive blanks to be filled out relating to their previous courses of study.

They are required to furnish certificates from officers of the colleges or scientific schools where they have studied, as to the courses pursued in physics, chemistry, and biology. If such certificates are satisfactory, no examination in these subjects will be required.

Candidates who have not received a degree in arts or in science from an approved college or scientific school, will be required to pass, at the beginning of the session, first the matriculation examination for admission to the collegiate department of the Johns Hopkins University, and then examinations equivalent to those passed by students completing the Chemical-Biological course which leads to the A. B. degree in this University.

No one will be admitted to advanced standing without furnishing evidence that these terms of admission as regards preliminary training have been fulfilled, and that courses equivalent in kind and amount to those given here, preceding that year of the course for admission to which application is made, have been satisfactorily completed.

Hearers, not candidates for a degree, will be received at the discretion of the Faculty.

GENERAL PLAN OF INSTRUCTION.

The course of instruction is planned for those who have received a liberal education and the training in physics, chemistry, and general biology which has been specified. The required period of study for the degree of Doctor of Medicine is four years. The academic year begins on the first of October and ends about the middle of June. There are short recesses at Christmas and Easter.

The first two years of the course are devoted mainly to the fundamental medical sciences, a large part of the time being spent in practical work in the laboratories. In the latter two years medicine, surgery, obstetrics, and the various specialties are studied in the Clinical Laboratories, the Dispensary, and the wards of the Hospital.

The principal studies of the first year are anatomy, including normal histology, microscopic anatomy, embryology, physiology, and physiological chemistry. The study of anatomy and of physiology is continued in the second year. Throughout the second year general pathology, pathological anatomy, and pharmacology are studied. A practical course in bacteriology, with the chief emphasis upon its hygienic and pathological bearings, is given during three months of this year.

Upon the basis of thorough training in the medical sciences, pursued during the first two years of the course, the student should now be well fitted to undertake the study of practical medicine and surgery.

During the third year the general principles of medicine, surgery, and obstetrics are studied, and clinical instruction in medicine and surgery is given. The study of certain special branches of medicine is also begun. Leading features of the work of this year are the courses in the Clinical Laboratories and practical work in the Dispensary.

During the fourth year the practical study of medicine, surgery, and obstetrics is continued, and instruction is given in gynecology and the various special branches of medicine and surgery, viz: dermatology, diseases of the nervous system, genito-urinary diseases, laryngology, ophthalmology and otology, paediatrics, and psychiatry. In this year the students serve as clinical clerks and surgical dressers in the wards of the Hospital and are in daily attendance at special classes in the Dispensary. They will also attend cases of labor in the obstetrical wards of the Hospital, and, under proper supervision, in the homes of patients. For the ward and dispensary work the class is divided into small groups.

Instruction in hygiene, legal medicine, and medical history is provided during the course.

Work in the dissecting room, in the laboratory, and at the bedside, demonstrations, clinics, lectures, and recitations are the main features of the methods of instruction. Simply didactic lectures occupy a subsidiary position, as compared with instruction by recitations and demonstrations and especially by practical work in the various laboratories, in the Hospital wards, and in the Dispensary. In consequence of the high standard of admission, the classes are not likely to be excessively large, and abundant opportunity is therefore afforded for practical work for each student and for personal contact between teacher and student.

LABORATORIES AND CLINICAL OPPORTUNITIES.

The nature of the practical work requires that each student, during each year of the course, shall be supplied with a microscope. Every student is recommended to purchase a microscope. Each student who does not possess a microscope is furnished with one which he retains for his own use throughout the academic year, at a yearly rental of five dollars.

The Physiological Laboratory is in the Biological Building of the University, which is a large four-story structure well arranged and equipped for its special purposes.

The Anatomical and the Pharmacological Laboratories occupy the Women's Fund Memorial Building, which was erected in 1894 upon a large plot of ground owned by the University opposite the Hospital. This is a commodious building, three stories in height, constructed for the accommodation of the various anatomical laboratories. In the basement is a cold-storage plant for the preservation of bodies for dissection. The first story is for the present occupied by the department of pharmacology, which is well supplied with the necessary collections and apparatus for the practical and experimental study of this subject. The two upper stories are fitted up with all the necessary apparatus for instruction and research in embryology, histology, and gross anatomy. Instead of one large dissecting room, there are a number of small dissecting rooms, which thus afford the best opportunity for the work for which they are intended. There is a good collection of anatomical preparations, models, casts, and diagrams available for the use of students. This building contains rooms for photomicrography and for dark-room projections.

The Pathological Laboratory is a four-story building on the grounds of the Hospital. This building contains the morgue and the autopsy theatre, the pathological museum, and rooms for instruction and research in bacteriology, pathological histology, and experimental pathology. The class rooms are commodious and well lighted. There is ample supply of material for study in all departments of pathology and in bacteriology.

The Laboratory of Physiological Chemistry occupies for the present the third story of the Pathological Building.

The Clinical Laboratories are in the Hospital buildings. The Hospital has recently received a generous gift of money for the construction and equipment of a clinical laboratory. It is expected that the new building will be ready for use in the autumn of 1896.

Abundant clinical material is afforded by the Johns Hopkins Hospital and Dispensary. The Medical Department of the University is in close connection with the Hospital, and derives signal advantages from the resources of this institution. The clinical amphitheatre and operating rooms are in the Hospital buildings.

The new lying-in department of the Hospital will be in operation in the autumn of 1896.

Practical instruction in the study of mental diseases is given by the Professor of Psychiatry and the Associate in Neuro-Pathology in the City Asylum at Bay View.

In the main building of the Hospital is a medical library with full sets of medical periodicals. The various special laboratories possess also appropriate libraries. These, as well as the libraries and reading room of the University and those of the Peabody Institute, are available without charge for the use of medical students.

Three associations, the Hospital Medical Society, the Historical Club, and the Journal Club, which are open to students, meet in the Assembly Room of the Hospital, one each Monday evening throughout the academic year.

COURSES OF INSTRUCTION.

The following statements are designed to exhibit the opportunities and the character of the instruction and practical work in each department. Schedules of the hours and other details of the exercises are furnished to the students at the beginning of each annual session.

ANATOMY.

The instruction in Anatomy is in charge of Dr. Franklin P. Mall, Professor of Anatomy, with the aid of Dr. Lewellys F. Barker, Associate in Anatomy, and Dr. J. Williams Lord, Instructor in Anatomy.

The course in Anatomy consists of vertebrate embryology, histology and histogenesis, and gross and microscopic human anatomy. The course in histology is completed during the first year. That in gross anatomy begins, in October of the first year, with osteology and continues with practical anatomy during the first and second years. It is recommended that the student complete the greater part of one dissection of the body during the first academic year.

The instruction in histology and microscopic anatomy consists mainly of practical work in the laboratory, but it is supplemented by a series of morning lectures with demonstrations, exhibitions of charts and models, and dark-room projections. The course begins October first and continues until March fifteenth. The regular class work is arranged so as to occupy three full forenoons each week and additional time is provided for special work in technique and for recitations. The elementary tissues are studied chiefly by teasing, dissecting, macerating, and digesting, in the early part of the course, and later the architecture of the organs and the search for morphological units in these are taken up. In the study of the organs emphasis is laid on the naked-eye appearances of the tissues, and the student is at all times urged to pass as gradually as possible from the macroscopic appearances to the microscopic pictures as seen with high powers. The work which the student has before him in subsequent years is borne in mind and extensive use is made of human tissues. Throughout, the attempt is made to direct the student's training along the lines which will be most serviceable to him in his physiological and pathological studies.

The course terminates with the finer anatomy and histology of the central nervous system and the sense organs, to which six weeks' time is allotted and during which the student is familiarized with some of the modern methods of neurological investigation. Text-books in English, French, and German are used in the course, and the student is referred to original articles in the literature in each department of the subject and is encouraged to read and abstract some of them.

In connection with the work in histology, considerable attention is paid to the morphological and histogenetic relations of the tissues, with the aim of throwing as much light as possible upon the developmental relations of the tissues and the bearing of these upon human anatomy in general.

From March 15 to June 1 considerable time is available for review or for additional work in this subject.

Parallel with the above course that on Human Anatomy is given.

The anatomical course begins the first of October with demonstrations and recitations in osteology. A complete set of bones is loaned to each student for the first year to enable him to become well acquainted with the bones of the human body.

Human anatomy is taught in the dissecting-room, as soon as the cool weather sets in. The laboratory is furnished with a cold storage apparatus, which provides a constant and abundant supply of excellent anatomical material.

The work of each student is conducted independently of that of all others. It is continuous until he has dissected and studied the whole body, and then he may rework any portion of the body or undertake special dissections. During the winter months of the first two years of the course sufficient time is available for the thorough study of anatomy by dissections.

Applied anatomy is taught by the professors or instructors in various practical branches of medicine and surgery.

In addition to the systematic courses given in anatomy, every opportunity is offered to advanced students who are prepared to undertake original investigations. The laboratory is well provided with apparatus and material for experimentation upon animals, as well as for research in vertebrate embryology, histology, neurology, and anatomy. The new anatomical laboratories in the Women's Fund Memorial Building are large enough to meet all these requirements. There is an abundance of well lighted and well ventilated rooms. There are many models and charts, a cold storage apparatus for the preservation of anatomical material, and an extensive photographic outfit.

PHYSIOLOGY.

The instruction in Physiology is under the charge of Dr. William H. Howell, Professor of Physiology, assisted by Dr.

George P. Dreyer, Associate in Physiology. The course extends from January 1 of the first year to January 1 of the second year.

The work consists of lectures, experimental work in the laboratory, demonstrations, and recitations. The lectures are fully illustrated by experiments and demonstrations given in the lecture-room. Weekly recitations are held upon the subject-matter covered by the lectures.

The laboratory course is arranged to occupy six hours a week for about twelve weeks. In this course the students are required to perform the simpler experiments upon muscle, nerve, circulation, and vision, making use of the various graphic methods employed in physiology. The work is intended to give an idea of the methods used in experimental physiology, and to furnish also that basis of actual acquaintance with facts which is necessary for intelligent reading.

In addition to the foregoing exercises, which comprise the required work, students are given opportunities to participate in the more advanced courses carried on in the laboratory, and intended primarily as graduate work. These courses are as follows: A physiological journal club meets weekly to discuss the recent literature in animal physiology and histology. A physiological seminary meets weekly during the year. The object of the seminary work is to study carefully by means of lectures or readings some special part of physiology. The topics chosen vary each year. An advanced course of laboratory work is arranged,—intended to teach the methods of physiological demonstration and research. This course is under the control of the professor of physiology, and is not limited as to time or amount of work, with the exception that assistance from the professor must be arranged for by definite engagements. It is designed for those who expect to become teachers or investigators in physiology, pathology, or pharmacology, and the number permitted to take it is necessarily limited. For purposes of research the laboratory is well equipped.

PHYSIOLOGICAL CHEMISTRY.

The instruction in Physiological Chemistry is under the charge of Dr. John J. Abel, Professor of Pharmacology, and of Thomas B. Aldrich, Ph. D., Instructor in Physiological Chemistry, with the aid of an assistant.

Instruction in this branch is given by laboratory work, illustrated lectures, and conferences of a less formal character. The work in the laboratory begins the first of March and continues, with daily exercises, until the end of the first year of the course.

In the lectures the substances that have been isolated from the fluids and tissues of the body are considered chiefly with regard to their connection with physiological processes. The physical and chemical properties of these substances and their chemical relationships also receive due attention whenever they promise to throw light on animal metabolism, for it is thought that a treatment of the subject which emphasizes the chemical properties of the constituents of the body, will best prepare the student to meet important questions that will arise later in his study of pathology, pharmacology, hygiene, and practical medicine.

The laboratory instruction covers the following ground:

1. The isolation of the more important constituents of the various tissues and fluids of the body, of its secretions and excretions in health and in disease, and the study of such of the physical and chemical properties of these constituents as are of most importance from the physiological point of view.
2. Selected qualitative and quantitative methods employed in the study of the various tissues, the products of gastric and pancreatic digestion, the urine, blood, bile, biliary and renal calculi, milk, pus, and faeces.
3. The synthetic formation of some of the constituents of the body, such as urea, uric acid, hippuric acid, cholin, leucin, etc.,—when the student has completed the work under 1 and 2.

PHARMACOLOGY AND TOXICOLOGY.

The instruction in Pharmacology is under the direction of Dr. John J. Abel, Professor of Pharmacology, with the aid of Dr. Albert C. Crawford, Assistant in Pharmacology. The instruction is given in the second year of the course by illustrated lectures and by laboratory work. Pharmacology is taught by both lectures and experiments, and students will themselves arrange apparatus and perform experiments under the immediate supervision of the professor in charge, or of his assistant.

The practical work includes such topics as the action of drugs on the heart, vessels and vasomotor apparatus, on the respiratory apparatus, brain and spinal cord, voluntary and involuntary muscles, kidneys, salivary and sweat glands, intestines, liver, etc. The chemical side of Pharmacology also receives due attention. The fate of drugs in the organism, their influence on the metabolism of the body and the manner of their excretion are fully treated in lectures and illustrated whenever possible.

A course of lectures, with demonstrations in Toxicology, is given in the second half-year.

Pharmacy is also treated in a short course of illustrative lectures.

Actual practice in prescribing and dispensing drugs and in the employment and application of the various therapeutic agents used in medicine is obtained in connection with the practical clinical work of the third and fourth years.

PATHOLOGY AND BACTERIOLOGY.

The instruction in Pathology and Bacteriology is under the charge of Dr. William H. Welch, Professor of Pathology, with the coöperation of Dr. Simon Flexner, Associate Professor of Pathology, of Dr. George Blumer, Assistant in Pathology, and of an Assistant in Bacteriology.

General and Special Pathological Anatomy, General Pathology, and Bacteriology are taught by lectures, recitations, demonstrations, and laboratory work. Instruction is given in the methods of making post-mortem examinations and of recording in proper protocols the results. These courses continue throughout the second year. The laboratory work occupies three half-days a week throughout the year.

The Autopsies are held in the Pathological Building and are witnessed by the students of the second, third, and fourth years.

The course in Bacteriology precedes that in Pathology. It begins in October and continues for three months, occupying three half-days a week. It is a practical laboratory course in which the students become familiar with the preparation of culture media, the principles of sterilization and disinfection, the methods of cultivating, staining, and studying bacteria, the biological examination of air, water, and soil, and the important species of known pathogenic micro-organisms. The hygienic, as well as the pathological, relations of bacteriology are considered. A course of lectures devoted mainly to the consideration of infection and immunity is given during the period of practical work in bacteriology.

The principal subjects in General Pathology are taken up systematically and taught as far as practicable by actual demonstration and experiments. Gross Morbid Anatomy is studied at the autopsy table and by demonstration of fresh and preserved specimens. Pathological Histology is taught as a part of Pathological Anatomy, the description and demonstration of gross lesions being accompanied by the microscopical examination of the same lesions. Much use is made of frozen sections of fresh organs. The course begins with the study of inflammation, and in regular order the pathological anatomy and histology of the different tissues and organs of the body are taken up. Microscopical sections are given to be stained, mounted, and carefully studied and drawn. Instruction in the technique of making pathological examinations, including the methods of pathological histology, and practice in pathological diagnosis are afforded.

A recitation is held once a week throughout the year. Didactic lectures are given upon subjects which can not be satisfactorily treated in the laboratory.

In addition to the courses for undergraduate students, opportunity is afforded for advanced work and special research in Pathological Histology, Experimental Pathology, and Bacteriology. For these purposes the Pathological Laboratory is well equipped with the necessary apparatus and material.

MEDICINE.

The instruction in this department is under the charge of Dr. William Osler, Professor of Medicine, with whom are associated Dr. W. D. Booker, Clinical Professor of the Diseases of Children, Dr. H. M. Thomas, Clinical Professor of Diseases of the Nervous System, Dr. W. S. Thayer, Associate in Medicine, and Drs. Frank R. Smith and T. B. Futcher, Instructors in Medicine.

The teaching is in the Dispensary, in the Clinical Laboratory, and in the Wards.

The work of the third year is as follows:

I. Demonstrations in Medical Anatomy and Physiology. These comprise a review of the Topographical Anatomy of the viscera, and a consideration of the normal functions and physical signs of the organs in health, so far as they relate to practical medicine.

II. Instruction in History-taking. After a brief didactic introduction, the students learn the method of history-taking, by obtaining the anamnesis of patients in the Dispensaries.

III. The Practical Study of the Symptoms and Signs of Disease. The work of the year consists largely in a systematic study of the symptoms of disease. For this purpose the patients in the Medical, Neurological, and Children's Dispensaries are utilized. The teaching is objective and practical. The student learns the use of the instruments of precision employed in clinical research—the Stethoscope, Microscope, Opthalmoscope, etc.—by daily routine manipulations.

IV. Clinical Laboratory. During two afternoons of the week throughout the session, the class meets the instructor in the Clinical Laboratory and studies systematically the methods of examining the urine, sputum, blood, fæces, gastric juices, etc.

V. Recitations. At stated intervals recitations are held in which the progress of the student is tested, and in which theoretical considerations are discussed.

The work of the fourth year will consist of:

I. General Medicine.

1. Ward-work, in which the students, acting as clinical clerks, will be assigned beds and take the histories of new cases as admitted, and be responsible (under the direction of the house physician and the first assistant) for the ward notes.
2. Ward Classes. The students will make the visit with Professor Osler on three days of the week at 9 a. m., and in this way will be enabled to study in a routine manner the progress of the cases. Special instruction will be given in the methods of treating diseases.
3. Recitations. (Drs. Osler, Booker, Thomas, and Thayer).

II. Diseases of Children. (Professors Osler and Booker).

The students will be assigned in groups to the Children's Dispensary. Professor Booker will also hold a clinic and recitation weekly, and direct the reading of the class on the subject.

III. Diseases of the Nervous System. (Professors Osler and Thomas).

The students will go in groups to the Neurological Dispensary and study the cases, as they appear, under the direction of Professor Thomas, who will also hold a clinic and recitation weekly.

SURGERY.

The instruction in Surgery is in charge of Dr. William S. Halsted, Professor of Surgery, assisted by Dr. J. M. T. Finney, Associate in Surgery, by Dr. Joseph C. Bloodgood, Instructor in Surgery, by Dr. Sidney M. Cone, Assistant in Surgical Pathology, and by an Assistant in Genito-Urinary Diseases.

The teaching is in the Dispensary, in the Wards of the Hospital, and in the Laboratory of Surgical Pathology.

The principal work of the third year relates to surgical pathology, surgical diagnosis, and the general principles of surgery. It includes:

I. Surgical Pathology. The macroscopical and microscopical appearances of the different stages of repair of wounds under various conditions are studied. Pathological material from the operating rooms is regularly assigned to students for examination. Practice is afforded in the macroscopical and microscopical diagnosis of tumors and in surgical bacteriology.

II. Minor Surgery is taught in the Dispensary, where the student is brought into personal contact with the patients and gains practical experience in the application of surgical dressings and apparatus and, in general, in the treatment of surgical cases.

III. Clinical Surgery. The students attend a weekly clinic by Professor Halsted.

IV. Operative Surgery. This is taught by practical exercises.

V. Weekly Recitations.

The work of the fourth year will consist of:

I. Ward work. The students will be assigned beds and take the history of cases, acting as surgical dressers.

II. Ward classes. The students will make morning visits to the wards with the surgeon, and will receive bedside instruction, thus having opportunity to become familiar with the management and progress of surgical cases.

III. Surgical Diagnosis. There will be a weekly exercise in which cases will be presented for diagnosis.

IV. Clinical Surgery. The students will attend two clinics weekly.

V. There will be opportunity for the continuance of the study of surgical pathology and of practice in operative surgery.

VI. Recitations.

OBSTETRICS.

The instruction in Obstetrics is given in the third and fourth years by Dr. J. Whitridge Williams, Associate Professor of Obstetrics, assisted in the clinical work by the Obstetrical Assistants of the Hospital, as follows:

In the third year, five to seven hours a week are devoted to the theoretical teaching of Obstetrics. The time is divided between:

I. Didactic lectures.

II. Laboratory instruction in the anatomy, histology, and pathology of the female generative organs, from an obstetrical point of view, and the pathology of the various diseases of pregnancy, labor, and the puerperal state, as well as the various diseases of bone, which play so important a part in the production of deformed pelves.

III. Demonstration of the various operative procedures upon the mannikin, with practical exercises by the students.

IV. Recitations.

In the fourth year, the greater part of the work will be practical.

I. The students will be divided into small groups for practical clinical instruction in the lying-in ward.

II. They will also be required to attend, under proper supervision, a definite number of poor women at their own homes.

III. There will be weekly meetings of the class for clinical conference, in which cases which have been observed by the students will be discussed and criticised and practical lessons drawn from them. At the same time recitations will be held, which will be accompanied by illustrative demonstrations by the students upon the mannikin and with the microscope.

IV. In the early part of the year, there will be a short course of lectures upon Teratology.

GYNECOLOGY.

The instruction in Gynecology is in charge of Dr. Howard A. Kelly, Professor of Gynecology and Obstetrics, assisted by Dr. W. W. Russell, Associate in Gynecology, and by Dr. T. S. Cullen, Instructor in Gynecology. The teaching of this subject is in the fourth year of the course, and will consist of work in the Dispensary, in the Hospital Wards and Operating Rooms, and in the Laboratory. Instruction will be given in the care of cases in the Wards and in the Dispensary, in gynecological examinations under ether, in minor and major gynecological operations, and in gynecological pathology. The students, divided into small groups, will be in daily attendance during two months in the gynecological dispensary. There will be weekly clinics and recitations.

SPECIAL DEPARTMENTS OF PRACTICAL MEDICINE AND SURGERY.

Instruction in these various special departments will be given mainly in the fourth year. For the Ward and Dispensary work the class will be divided into sections, so arranged that each section will be in daily attendance during two months upon a dispensary class in the morning from 10.30 to 12 o'clock, and upon another in the afternoon from 2 to 3.30. At 12 and at 3.30 there will be a daily clinic, lecture, or recitation in one of the special branches.

The students will perform their work in General Medicine, General Surgery, Obstetrics, and Gynecology in the Hospital wards before 10.30 a. m. By this arrangement and by rotation, each group of students in the fourth year will have two months of daily practical ward work in Medicine, Surgery, Obstetrics, and Gynecology, and two months of daily dispensary work in Dermatology, Diseases of Children, Diseases of the Nervous

System, Genito-Urinary Diseases, Gynecology, Laryngology and Rhinology, and Ophthalmology and Otology. In addition, the entire class will have two hours each day for a clinic, lecture, or recitation in these special departments.

DERMATOLOGY.

The instruction in this department is in charge of Dr. J. Williams Lord and Dr. Thomas C. Gilchrist, Associates in Dermatology, and consists of:

I. A weekly Clinic or Recitation.

II. Daily work in the Dispensary for two months for each group of students in the fourth year.

DISEASES OF CHILDREN.

Dr. William D. Booker, Clinical Professor of Diseases of Children.

(See under Medicine.)

DISEASES OF THE NERVOUS SYSTEM.

Dr. Henry M. Thomas, Clinical Professor of Diseases of the Nervous System.

(See under Medicine.)

GENITO-URINARY DISEASES.

This department is in charge of the Professor of Surgery and an Assistant. There will be:

I. A weekly Clinic or Recitation.

II. Daily work in the Dispensary for two months.

LARYNGOLOGY (including diseases of the Nose and Pharynx).

The instruction in this department is in charge of Dr. John N. Mackenzie, Clinical Professor of Laryngology. There will be:

I. A weekly Clinic or Recitation.

II. Daily work in the Dispensary for two months. Practical instruction in the use of the laryngoscope and rhinoscope will be given.

OPHTHALMOLOGY AND OTOLOGY.

Instruction in this department will be given by Dr. Samuel Theobald, Clinical Professor of Ophthalmology and Otology, and Dr. Robert L. Randolph, Associate in Ophthalmology and Otology. There will be:

I. A weekly Clinic or Recitation.

II. Daily work in the Dispensary for two months. There will be practical instruction in the use of the ophthalmoscope.

PSYCHIATRY.

The instruction in Diseases of the Mind is in charge of Dr. Henry M. Hurd, Professor of Psychiatry, and of Dr. Henry J. Berkley, Associate in Neuro-Pathology. There will be a course of lectures, recitations, and clinical demonstrations by Professor Hurd and Dr. Berkley, and the students will visit the wards of the City Asylum at Bay View, where they will have opportunity to study the various forms of insanity.

HISTORY AND LITERATURE OF MEDICINE.

Lectures upon this subject are given by Dr. John S. Billings, Lecturer on the History and Literature of Medicine.

HYGIENE.

Instruction in Hygiene is included in the courses in Pathology and Bacteriology and in Physiological and Hygienic Chemistry.

LEGAL MEDICINE.

This subject will receive attention in the courses in Pathological Anatomy and in Toxicology. Arrangements are contemplated also for more special instruction in medical jurisprudence.

SPECIAL LECTURES.

It is expected that arrangements will be made for short courses by specially appointed lecturers on certain selected topics.

EXAMINATIONS.

At the end of the first year examinations in physiological chemistry, normal histology, and microscopic anatomy are held.

At the end of the second year there are examinations in anatomy, physiology, pathology, bacteriology, and pharmacology.

At the end of the third year there are examinations in medicine, surgery, and obstetrics, so far as these subjects have been pursued.

At the end of the fourth year will be the final examinations in medicine, surgery, obstetrics, gynecology, and the special branches in which instruction has been provided.

The examinations are partly written and partly oral, and include practical tests of laboratory and clinical work.

Each student must pass the examinations at the end of each year, before he can be admitted to the courses of the succeeding year.

CHARGES FOR TUITION.

The charge for tuition is two hundred dollars per annum, payable at the Treasurer's office, in semi-annual instalments, October 1 and February 1. There are no extra charges for instruction in any department or for laboratory courses, except for materials consumed. For those who do not possess microscopes, there is an annual charge of five dollars for the use of a microscope. The student is responsible for damage to the microscope thus rented. A deposit of ten dollars as caution money is required from each student at the time of his enrolment. The caution money is repaid to the student when he leaves, if there are no charges against him. Special charges are made for breakage and for damage to apparatus.

Inquiries may be addressed to the Registrar of the Johns Hopkins University.

APPENDIX.

I.

THE MARY ELIZABETH GARRETT FUND.*

TERMS OF THE GIFT, AS ACCEPTED BY THE TRUSTEES, FEBRUARY 21, 1893.

Miss Mary Elizabeth Garrett, in order to make up the sum of $500,000, which the Board of Trustees required should be secured as an endowment before the Medical School of the University was opened, has contributed to that fund the sum of $306,977 upon the following terms, which have been agreed to by the University:

1. That women shall enjoy all the advantages of the Medical School of the Johns Hopkins University on the same terms as men, and shall be admitted on the same terms as men to all prizes, dignities or honors that are awarded by competition, examination or regarded as rewards of merit.

2. That not more than $50,000 of the original endowment of $500,000 shall be expended on a building or buildings; and that in memory of the contributions of the Committees of the Women's Medical School Fund, this building, if there be but one, or the chief building, if there be more than one, shall be known as the Women's Fund Memorial Building.

3. That the Medical School of the University shall be exclusively a graduate school as hereinafter explained, that is to say: That the Medical School of the Johns Hopkins University shall form an integral part of the Johns Hopkins University, and like other departments of the University, shall be under the management and control of the Trustees of the said University; that it shall provide a four years' course, leading to the degree of Doctor of Medicine; that there shall be admitted to the School those students only who by examination or by other tests equally satisfactory to the Faculty of the Medical School (no distinction being made in these tests or examinations between men and women), have proved that they have completed the studies included in the Preliminary Medical Course (Group Three, Chemical-Biological Course) as laid down in the University Register (but this condition is not meant to restrict the Trustees from receiving as hearers, but not as candidates for the degree of Doctor of Medicine, those who have received the degree of Doctor of Medicine, or its equivalent, in some school

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* So designated by the Trustees, December 24, 1892.

of good repute); and that the degree of Doctor of Medicine of the Johns Hopkins University shall be given to no Doctors of Medicine who have not proved by examination or by other tests equally satisfactory to the Faculty of the Medical School that they have completed the studies included in the Preliminary Course, besides completing the course of instruction of the Medical School of the Johns Hopkins University.

The aforegoing provisions shall not be construed as restricting the liberty of the University to make such changes in the requirements for the admission to the Medical School of the Johns Hopkins University or to accept such equivalents for the studies required for admission to this school as shall not lower the standard of admission specified in this clause: provided that the requirements in modern languages other than English shall not be diminished, and provided also that the requirements in non-medical scientific studies shall include at least as much knowledge of natural science as is imparted in the three minor courses in science now laid down in its university register, the subjects and arrangements of these scientific studies being subject to such modifications as may from time to time seem wise to its Board and to the Faculty of the Medical School, but being at all times the same for all candidates for admission. (For such requirements always see University Register.)

4. That the terms of this gift and the Resolutions of October 28th, 1890, by which the Trustees accepted the gift of the Woman's Medical School Fund, shall be printed each year in whatever annual calendars may be issued announcing the courses of the Medical School.—See appended Resolutions.

5. That there shall be created a committee of six women to whom the women studying in the Medical School may apply for advice concerning lodging and other practical matters, and that all questions concerning the personal character of women applying for admission to the School, and all non-academic questions of discipline affecting the women studying in the Medical School shall be referred to this committee, and by them be in writing reported for action to the authorities of the University; that the members of this committee shall be members for life; that the committee, when once formed, shall be self-nominating, its nominations of new members to fill such vacancies as may occur being subject always to the approval of the Board of Trustees of the University.

6. That in the event of any violation of any or all of the aforesaid stipulations, the said sum of $306,977 shall revert to her, or such person or persons, institution or institutions, as she by testament or otherwise may hereafter appoint.

It will be observed that by the tenor of the aforegoing terms no university course will be in any way modified by any conditions attached to her gift. Those conditions relate exclusively to preparation for the Medical School, and have received, in the shape in which they are now presented, the unanimous approval of the Medical Faculty of the University.

The terms of admission to the Medical School of the University as formulated and interpreted by the Medical Faculty of the University, February 4, 1893, and here subjoined, are therefore in entire accordance with the terms of her gift.

(Signed) MARY E. GARRETT.

REQUIREMENTS FOR ADMISSION TO THE MEDICAL SCHOOL OF THE JOHNS HOPKINS UNIVERSITY, UNANIMOUSLY APPROVED BY THE MEDICAL FACULTY, FEBRUARY 4, 1893.

A course of four years' instruction will be provided leading to the degree of Doctor of Medicine.

To this course there will be admitted as candidates for the degree:

1. Those who have satisfactorily completed the Chemical-Biological Course which leads to the A. B. Degree in this University.
2. Graduates of approved Colleges or Scientific Schools who can furnish evidence: (*a*) That they have a good reading knowledge of French and German; (*b*) That they have such knowledge of Physics, Chemistry and Biology as is imparted by the regular Minor Courses given in these subjects in this University.
3. Those who give evidence by examination that they possess the general education implied by a degree in arts or in science from an approved College or Scientific School, and the knowledge of French, German, Physics, Chemistry and Biology, already indicated.

By approved Colleges and Scientific Schools are meant those whose standard for graduation shall be considered by this University as essentially equivalent to its standard for graduation in the undergraduate department.

It is to be understood that at least one year's study in the Chemical and Biological Sciences in their immediate relations to medicine shall be required from students after their entrance to the medical school.

II.

THE WOMEN'S MEDICAL SCHOOL FUND.

At a meeting of the Board of Trustees of the University, October 28, 1890, the following letter was presented:

"The committees formed for the purpose of raising a fund to procure the most advanced medical education for women, can now place at your disposal the sum of one hundred thousand dollars for the use of your medical school, if you will, by resolution, agree that women whose previous training has been equivalent to your preliminary medical course, shall be admitted to the school, when it shall open, upon the same terms which may be prescribed for men. There can be no doubt that women ought to be trained to act as nurses for sick women. There is as little doubt that a sufficient number of women ought to be educated and trained in such manner as to be fully able to care for sick women who may wish or ought to be treated by women. We have devoted ourselves to the furtherance of this object. We have reason to hope that a university which proposes to found a medical school intended to teach advanced methods in the treatment of those diseases which afflict mankind, will not refuse to women the opportunity of learning such methods. There is now a general interest in our movement. In order that this interest may be sustained we ask you to consider our offer at the earliest possible period.

NANCY MORRIS DAVIS,
Chairman of the Baltimore Committee."

The following minute was adopted by the Trustees:

The President and Board of Trustees of the Johns Hopkins University have received from Mrs. Nancy Morris Davis, chairman of one of the committees formed for the purpose of raising a fund to procure the most advanced medical education for women, the gratifying intelligence that $100,000 has been raised for the use of their intended Medical School, and is at their disposal, if they will, by resolution, agree to the terms upon which the money was contributed by its donors.

These terms are that this Board, if it accepts the funds thus raised, shall agree, by resolution, that, when its Medical School shall be opened, women whose training has been equivalent to the preliminary medical course prescribed for men, shall be admitted to such school upon the same terms as may be prescribed for men.

The offer to this University of the particular fund is the free voluntary act of women residing in this State and in other states, made without the suggestion or solicitation of this Board, and we accept it under and subject to the terms which are made a part of the gift, with the understanding and declaration, however, that such preliminary training in all its parts shall be obtained in some other institution of learning devoted, in whole or in part, to the education of women, or by private tuition.

The fund so contributed shall be invested and known as "The Women's Medical School Fund," and that fund, and all interest to accrue thereon, and all additions made thereto for the same purpose, shall remain invested for the purposes of increase only until, with its aid as a foundation, a general fund has been accumulated amounting to not less than $500,000, and sufficient for the establishment and maintenance of a Medical School worthy of the reputation of this University and fully sufficient as a means of complete medical instruction. Then, and not until then, will a Medical School be opened by this University; and then, and not until then, will the gift now offered be used by this University; and then, and not until then, will the terms attached thereto be operative.

The utility of a training school for women nurses has been demonstrated by the experience and practice of the Johns Hopkins Hospital, and by the necessities of home life among our people.

This Board is satisfied that in hospital practice among women, in penal institutions in which women are prisoners, in charitable institutions in which women are cared for, and in private life, when women are to be attended, there is a need and place for learned and capable women physicians; and that it is the business and duty of this Board, when it is supplied with the necessary means for opening its proposed Medical School, to make provision for the training and full qualification of such women for the abundant work which awaits them in these wide fields of usefulness.

Nothing contained in this minute shall be construed as abridging, in any manner, the right of the Board of Trustees of the Johns Hopkins University to make such rules and regulations as they may deem necessary for the government of its School of Medicine, when it is organized; and in making such rules and regulations, the terms of this minute shall always be respected and observed.

WOMEN'S COMMITTEE OF THE MEDICAL SCHOOL, APPOINTED BY MISS GARRETT, DECEMBER 22, 1892.

MRS. HENRY M. HURD,
MRS. IRA REMSEN,
MRS. WILLIAM OSLER,
MISS M. CAREY THOMAS,
MISS MARY M. GWINN,
MISS MARY E. GARRETT.

Their duties are stated in paragraph 5 of the letter printed above.

JOHN MURPHY & CO., PRINTERS,
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PRINCETON, N. J.
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CONTENTS

PAGE
Trustees of the Johns Hopkins University - - - - - - 5
Trustees of the Johns Hopkins Hospital - - - - - - - - 5
Calendar - - - - - - - - - - - - - - - - - 6
The Faculty of Medicine - - - - - - - - - - - 7

PART I. CATALOGUE AND ANNOUNCEMENT OF THE COURSES OF INSTRUCTION FOR CANDIDATES FOR THE DEGREE OF DOCTOR OF MEDICINE - - - - - - - - - - - 13

Candidates for the Degree of M. D. - - - - - - - - 15
General Statement - - - - - - - - - - - - 21
Requirements for Admission - - - - - - - - - 22
Admission to Advanced Standing - - - - - - - - 24
General Plan of Instruction - - - - - - - - - 24
Laboratories - - - - - - - - - - - - - 26
Clinical Opportunities - - - - - - - - - - - 27
Regulations regarding Microscopes - - - - - - - - 28
Libraries, Medical Societies, and Publications - - - - - 28
Courses of Instruction - - - - - - - - - - - 29
Anatomy, Normal Histology, and Microscopic Anatomy - 29
Physiology - - - - - - - - - - - - - - 31
Physiological Chemistry - - - - - - - - - - 31
Pharmacology and Toxicology - - - - - - - - 32
Pathology and Bacteriology - - - - - - - - 33
Medicine and Clinical Microscopy - - - - - - - 35
Surgery - - - - - - - - - - - - - - 37
Obstetrics - - - - - - - - - - - - - - 38
Gynecology - - - - - - - - - - - - - 39
Special Departments of Practical Medicine and Surgery - 40
Dermatology - - - - - - - - - - - 41
Diseases of Children - - - - - - - - - 41
Diseases of the Nervous System - - - - - - 42
Genito-Urinary Diseases - - - - - - - - 42
Laryngology and Rhinology - - - - - - - 43
Ophthalmology and Otology - - - - - - - 43
Psychiatry - - - - - - - - - - - - 44

PAGE
Hygiene - - - - - - - - - - - - - 44
Medical Zoology - - - - - - - - - - 44
Legal Medicine - - - - - - - - - - - - 45
History and Literature of Medicine - - - - - - 45
Special Lectures - - - - - - - - - - 45
Programme of Courses - - - - - - - - - - 46
Annual Examinations - - - - - - - - - - 50
Hospital Appointments - - - - - - - - - - 51
Requirements for Graduation - - - - - - - - - 51
Charges for Tuition - - - - - - - - - - - 52
Appendix - - - - - - - - - - - - - - 53
Endowment - - - - - - - - - - - 53
The Mary Elizabeth Garrett Fund - - - - - - 54
The Women's Medical School Fund - - - - - - 56

PART II. CATALOGUE AND ANNOUNCEMENT OF THE SPECIAL COURSES OF INSTRUCTION FOR GRADUATES IN MEDICINE 59

Catalogue of Physicians Attending Special Courses - - - 61
General Information - - - - - - - - - - 65
Regulations regarding Microscopes for Graduate Courses - - 66
Statements as to the Courses for Graduates in Medicine - - 67
Normal Histology - - - - - - - - - - 67
Pathology and Bacteriology - - - - - - - 67
Clinical Microscopy - - - - - - - - - - 69
Medicine - - - - - - - - - - - - - 69
Surgery - - - - - - - - - - - - - 70
Gynecology - - - - - - - - - - - - 70
Dermatology - - - - - - - - - - - - 71
Diseases of Children - - - - - - - - - - 71
Diseases of the Nervous System - - - - - - - 71
Genito-Urinary Diseases - - - - - - - - - 71
Laryngology and Rhinology - - - - - - - 71
Ophthalmology and Otology - - - - - - - 71
Fees for Graduate Courses - - - - - - - - 72

TRUSTEES OF THE JOHNS HOPKINS UNIVERSITY

C. Morton Stewart,
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Francis White,
Treasurer.

Lewis N. Hopkins,
Secretary.

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James Carey Thomas,
C. Morton Stewart,
Joseph P. Elliott,
J. Hall Pleasants,
Alan P. Smith,
James L. McLane,
W. Graham Bowdoin,
William T. Dixon,
Benjamin F. Newcomer,

The President of the University, *ex officio.*

TRUSTEES OF THE JOHNS HOPKINS HOSPITAL

William T. Dixon,
President.

Joseph P. Elliott,
Vice-President.

Lewis N. Hopkins,
Secretary.

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Lewis N. Hopkins,
Alan P. Smith,
Joseph P. Elliott,
George W. Corner,
C. Morton Stewart,
William T. Dixon,
John E. Hurst,
James L. McLane,
Charles F. Mayer,
John A. Whitridge,
Henry D. Harlan.

CALENDAR, 1897-98

The present academic year closes June 15, 1897.

Commencement Day falls on Tuesday, June 15, 1897.

The fifth academic year begins October 1, 1897, and continues till June 15, 1898.

The Christmas Recess begins Friday, December 24, 1897.

Exercises will be resumed Monday, January 3, 1898.

Commemoration Day of the Johns Hopkins University falls on Tuesday, February 22, 1898.

The Spring Recess begins Thursday, April 7, and closes Wednesday, April 13, 1898.

The courses for Graduates in Medicine begin Monday, May 2, and close Friday, July 1, 1898.

THE FACULTY OF MEDICINE

The names are arranged in the several groups in the order in which the members of the staff assumed their duties.

PRESIDENT

DANIEL C. GILMAN, LL. D.

A. B., Yale University, 1852, and A. M., 1855; LL. D., Harvard University, 1876, St. John's College, 1876, Columbia University, 1887, Yale University, 1889, University of North Carolina, 1889, and Princeton University, 1896; Professor in Yale University, 1856–72; President of the University of California, 1872–75; Corresponding Member of the British Association for the Advancement of Science.
1300 Eutaw Place.

PROFESSORS

WILLIAM H. WELCH, M. D., LL. D.

Professor of Pathology and Dean.

A. B., Yale University, 1870; M. D., College of Physicians and Surgeons (N. Y.), 1875; M. D. (Hon.), University of Pennsylvania, 1894; LL. D., Western Reserve University, 1894, and Yale University, 1896; Professor of Pathological Anatomy and General Pathology in the Bellevue Hospital Medical College, N. Y., 1879–84; *Pathologist to the Johns Hopkins Hospital.*
935 St. Paul St.

IRA REMSEN, M. D., PH. D., LL. D.

Professor of Chemistry.

A. B., College of the City of New York, 1865; M. D., College of Physicians and Surgeons (N. Y.), 1867; Ph. D., University of Göttingen, 1870; LL. D., Columbia University, 1893, and Princeton University, 1896; Professor of Chemistry in Williams College, 1872–76, and previously Assistant in Chemistry in the University of Tübingen; Corresponding Member of the British Association for the Advancement of Science.
12 E. Biddle St.

WILLIAM OSLER, M. D., LL. D., F. R. C. P.

Professor of the Principles and Practice of Medicine.

M. D., McGill University, 1872, and LL. D., 1895; Fellow of the Royal College of Physicians, London; Professor of the Institutes of Medicine, McGill University, Montreal, 1874–84; Professor of Clinical Medicine, University of Pennsylvania, 1884–89; *Physician in Chief to the Johns Hopkins Hospital.*
1 W. Franklin St.

HENRY M. HURD, M. D., LL. D.

Professor of Psychiatry.

A. B., University of Michigan, 1863, M. D., 1866, A. M., 1870, and LL. D., 1895; Superintendent of the Eastern Michigan Asylum, 1878–89; *Superintendent of the Johns Hopkins Hospital.*
The Johns Hopkins Hospital.

WILLIAM S. HALSTED, M. D.

Professor of Surgery.

A. B., Yale University, 1874; M. D., College of Physicians and Surgeons (New York), 1877; formerly Attending Surgeon to the Presbyterian and Bellevue Hospitals, Associate Surgeon to Roosevelt Hospital, and Surgeon in Chief to the Emigrant Hospital, New York; *Surgeon in Chief to the Johns Hopkins Hospital.*
1201 Eutaw Place.

HOWARD A. KELLY, M. D.

Professor of Gynecology and Obstetrics.

A. B., University of Pennsylvania, 1877, and M. D., 1882; Associate Professor of Obstetrics, University of Pennsylvania, 1888–89; *Gynecologist to the Johns Hopkins Hospital.*
1406 Eutaw Place.

FRANKLIN P. MALL, M. D.

Professor of Anatomy.

M. D., University of Michigan, 1883; Fellow of the Johns Hopkins University, 1886–88, and Assistant in Pathology, 1888–89; Adjunct Professor of Anatomy, Clark University, 1889–92; Professor of Anatomy, University of Chicago, 1892–93.
200 E. Preston St.

JOHN J. ABEL, M. D.

Professor of Pharmacology.

Ph. B., University of Michigan, 1883; M. D., University of Strassburg, 1888; Professor of Materia Medica and Therapeutics, University of Michigan, 1891-93.
1604 Bolton St.

WILLIAM H. HOWELL, PH. D., M. D.

Professor of Physiology.

A. B., Johns Hopkins University, 1881; Fellow, 1882–84, Ph. D., 1884; Assistant in Biology, 1884–85, Associate, 1885–88, and Associate Professor, 1888–89; Lecturer, University of Michigan, 1889–90, M. D., 1890, and Professor of Physiology and Histology, 1890–92; Associate Professor of Physiology, Harvard University, 1892–93.
53 W. Mt. Royal Ave.

WILLIAM K. BROOKS, PH. D., LL. D.

Professor of Comparative Anatomy and Zoölogy.

A. B., Williams College, 1870, and LL. D., 1893; Ph. D., Harvard University, 1875; Fellow, Johns Hopkins University, 1876, Associate, 1876–83, and Associate Professor, 1883–91; Fellow, Royal Microscopical Society of London.

CLINICAL PROFESSORS

WILLIAM D. BOOKER, M. D.

Clinical Professor of Diseases of Children.

M. D., University of Virginia, 1867; Attending Physician to The Thomas Wilson Sanitarium, Baltimore; ***Associate in Pediatrics, The Johns Hopkins Hospital and Dispensary.***

851 Park Ave.

JOHN N. MACKENZIE, M. D.

Clinical Professor of Laryngology and Rhinology.

M. D., University of Virginia, 1876, and New York University, 1877; Corresponding Fellow of the Laryngological, Rhinological, and Otological Association of Great Britain; Corresponding Member of the Laryngological, Rhinological, and Otological Society of France; ***Laryngologist, The Johns Hopkins Hospital and Dispensary.***

879 Park Ave.

SAMUEL THEOBALD, M. D.

Clinical Professor of Ophthalmology and Otology.

M, D., University of Maryland, 1867; ***Ophthalmic and Aural Surgeon, The Johns Hopkins Hospital.***

304 W. Monument St.

HENRY M. THOMAS, M. D.

Clinical Professor of Diseases of the Nervous System.

M. D., University of Maryland, 1884; ***Assistant, The Johns Hopkins Hospital and Dispensary.***

1228 Madison Ave.

ASSOCIATE PROFESSORS

SIMON FLEXNER, M. D.

Associate Professor of Pathology.

M. D., University of Louisville, 1889; Fellow in Pathology, Johns Hopkins University, 1891-92, Associate in Pathology, 1892-95; ***Resident Pathologist, The Johns Hopkins Hospital.***

The Johns Hopkins Hospital.

J. WHITRIDGE WILLIAMS, M. D.

Associate Professor of Obstetrics.

A. B., Johns Hopkins University, 1886; M. D., University of Maryland, 1888; ***Associate in Obstetrics, The Johns Hopkins Hospital.***

845 Park Ave.

LEWELLYS F. BARKER, M. B.

Associate Professor of Anatomy.

M. B., University of Toronto, 1890; Fellow in Pathology, Johns Hopkins University, 1892-94; Assistant and Associate in Anatomy, 1893-95; ***Assistant Resident Pathologist, The Johns Hopkins Hospital.***

The Johns Hopkins Hospital.

WILLIAM S. THAYER, M. D.

Associate Professor of Medicine.

A. B., Harvard University, 1885, and M. D., 1889; Associate in Medicine, 1894–96; *Resident Physician, The Johns Hopkins Hospital.* The Johns Hopkins Hospital.

LECTURERS

JOHN S. BILLINGS, M. D., LL. D.

Lecturer on the History and Literature of Medicine.

A. B., Oxford College (Ohio), 1857, and A. M., 1860; M. D., University of Cincinnati, 1860; LL. D., University of Edinburgh, 1884, Harvard University, 1886; D. C. L., University of Oxford, 1889; M. D. (Hon.), University of Dublin, 1892; Deputy Surgeon-General, U. S. Army *(retired)*; Director of the Laboratory of Hygiene, University of Pennsylvania, 1895–96; Superintendent of the New York Public Library. 32 E. 31st St., New York.

CHARLES WARDELL STILES, PH. D., M. S.

Lecturer on Medical Zoölogy.

Ph. D., University of Leipzig, 1890; M. S. (Hon.), Wesleyan University, 1896; Corresponding Member, Society of Biology and Academy of Medicine (Paris); Zoölogist, U. S. Bureau of Animal Industry. Bureau of Animal Industry, Washington.

ASSOCIATES, INSTRUCTORS, AND ASSISTANTS

JOHN M. T. FINNEY, M. D.

Associate in Surgery.

A. B., Princeton College, 1884; M. D., Harvard University, 1888; *Associate in Surgery, The Johns Hopkins Hospital.* 923 N. Charles St.

GEORGE P. DREYER, PH. D.

Associate in Physiology.

A. B., Johns Hopkins University, 1887, Fellow in Biology, 1889–90, and Ph. D., 1890. 137 Jackson Place.

WILLIAM W. RUSSELL, M. D.

Associate in Gynecology.

M. D., University of Pennsylvania, 1890; Resident Gynecologist, The Johns Hopkins Hospital, 1894–95. 1503 Madison Ave.

HENRY J. BERKLEY, M. D.

Associate in Neuro-Pathology.

M. D., University of Maryland, 1881; Attending Physician to the City Asylum at Bay View. 1303 Park Ave.

J. WILLIAMS LORD, M. D.

Associate in Dermatology and Instructor in Anatomy.

A. B., Johns Hopkins University, 1884; M. D., University of Pennsylvania, 1887; *Dermatologist to the Johns Hopkins Hospital and Dispensary.* 825 N. Arlington Ave.

T. CASPAR GILCHRIST, M. R. C. S.

Associate in Dermatology.

1st. M. B., University of London, 1886; M. R. C. S., and L. S. A., London, 1887; *Dermatologist to the Johns Hopkins Hospital and Dispensary.* 317 N. Charles St.

ROBERT L. RANDOLPH, M. D.

Associate in Ophthalmology and Otology.

M. D., University of Maryland, 1884; *Associate Ophthalmic and Aural Surgeon to the Johns Hopkins Hospital and Dispensary.* 211 W. Madison St.

THOMAS B. ALDRICH, PH. D.

Associate in Physiological Chemistry.

Ph. D., University of Jena, 1891, and Assistant in Chemistry, Jena, 1891-92. 1601 Madison Ave.

THOMAS B. FUTCHER, M. B.

Associate in Medicine.

M. B., University of Toronto, 1893; Assistant Resident Physician, The Johns Hopkins Hospital, 1894-95. The Johns Hopkins Hospital.

JOSEPH C. BLOODGOOD, M. D.

Instructor in Surgery.

S. B., University of Wisconsin, 1883; M. D., University of Pennsylvania, 1891; *Resident Surgeon, The Johns Hopkins Hospital.* The Johns Hopkins Hospital.

THOMAS S. CULLEN, M. B.

Instructor in Gynecology.

M. B., University of Toronto, 1890; *Resident Gynecologist, The Johns Hopkins Hospital.* The Johns Hopkins Hospital.

ADOLPH G. HOEN, M. D.

Instructor in Photo-Micrography.

M. D., University of Maryland, 1872. 713 York Road.

FRANK R. SMITH, M. D.

Instructor in Medicine.

A. M., University of Cambridge (England), 1882; M. D., University of Maryland, 1891; Assistant Resident Physician, Johns Hopkins Hospital, 1891-93; *Chief of Medical Clinic, The Johns Hopkins Dispensary.* 1126 Cathedral St.

ALBERT C. CRAWFORD, M. D.

Assistant in Pharmacology.

M. D., College of Physicians and Surgeons (Balt.), 1893. 1009 N. Caroline St.

GEORGE W. DOBBIN, M. D.

Assistant in Obstetrics.

A. B., Johns Hopkins University, 1891; M. D., University of Maryland, 1894; *Assistant Resident Obstetrician, The Johns Hopkins Hospital.* The Johns Hopkins Hospital.

WALTER JONES, PH. D.

Assistant in Physiological Chemistry.

A. B., Johns Hopkins University, 1888, and Ph. D., 1891; Professor of Natural Science, Wittenberg College, 1891–92; Professor of Analytical Chemistry, Purdue University, 1892–95. 1811 Maryland Ave.

SYDNEY M. CONE, M. D.

Assistant in Surgical Pathology.

A. B., Johns Hopkins University, 1890; M. D., University of Pennsylvania, 1893; Assistant Resident Surgeon, The Johns Hopkins Hospital, 1894–95. 1607 Eutaw Place.

LOUIS E. LIVINGOOD, M. D.

Assistant in Pathology.

A. B., Princeton University, 1890; M. D., University of Pennsylvania, 1895; Fellow in Pathology, Johns Hopkins University, 1895–96. The Johns Hopkins Hospital.

Assistant in Bacteriology.

ROSS G. HARRISON, PH. D.

Instructor in Anatomy.

A. B., Johns Hopkins University, 1890, Fellow in Biology, 1893–94, and Ph. D., 1894; Lecturer in Morphology, Bryn Mawr College, 1894–95. 2018 Park Ave.

HENRY BARTON JACOBS, M. D.

Instructor in Medicine.

A. B., Harvard University, 1883, M. D., 1887, and Assistant in Botany, 1883–85. 1128 Cathedral St.

PART I

CATALOGUE AND ANNOUNCEMENT OF THE COURSES OF INSTRUCTION FOR CANDIDATES FOR THE DEGREE OF DOCTOR OF MEDICINE

STUDENTS, 1896-97

CANDIDATES FOR THE DEGREE OF M. D.

Fourth Year

BARDEEN, CHARLES RUSSELL A. B., Harvard University, 1893.	Syracuse, N. Y.	1200 *Guilford Av.*
BROWN, THOMAS RICHARDSON A. B., Johns Hopkins University, 1892.	Baltimore	1033 *Cathedral St.*
DAVIS, WALTER S. S. B., Amherst College, 1893.	Minneapolis, Minn.	1005 *N. Charles St.*
DAY, LESTER WIGGINS Ph. B., Yale University, 1893.	Baltimore	47 *W. Mt. Royal Av.*
HAMBURGER, LOUIS PHILIP A. B., Johns Hopkins University, 1893.	Baltimore	1501 *Eutaw Place*
HUNNER, GUY LE ROY S. B., University of Wisconsin, 1893.	Madison, Wis.	132 *Jackson Place*
LYON, IRVING PHILLIPS A. B., Yale University, 1893.	Hartford, Conn.	717 *N. Calvert St.*
MACCALLUM, WILLIAM GEORGE A. B., University of Toronto, 1894.	Dunnville, Ont.	1200 *Guilford Av.*
MCBRYDE, CHARLES NEIL S. B., University of South Carolina, 1891; M. S., Virginia Agricultural and Mechanical College, 1892.	Blacksburg, Va.	1213 *Eutaw Place*
MCCULLOH, WILLIAM WATSON A. B., Johns Hopkins University, 1889.	Baltimore	929 *McCulloh St.*
MITCHELL, JAMES FARNANDIS A. B., Johns Hopkins University, 1891.	Baltimore	1013 *Cathedral St.*
NICHOLS, JOSEPH LONGWORTH A. B., Harvard University, 1893.	Cincinnati, O.	1200 *Guilford Av.*
OPIE, EUGENE LINDSAY A. B., Johns Hopkins University, 1893.	Baltimore	219 *W. Monument St.*
PACKARD, MARY SECORD A. B., Vassar College, 1892; Harvard Summer School, 1893.	Bayonne, N. J.	851 *N. Eutaw St.*
PANCOAST, OMAR BORTON S. B., Swarthmore College, 1893.	Woodstown, N. J.	132 *Jackson Place*
PENROSE, CLEMENT ANDARIESE A. B., Johns Hopkins University, 1893.	Baltimore	21 *Mt. Royal Av. W.*
STRONG, RICHARD PEARSON Ph. B., Yale University, 1893.	Baltimore	*Fort McHenry*

Third Year

Baer, William Stevenson A. B., Johns Hopkins University, 1894.	Baltimore	24 *N. Broadway*
Benson, Thomas P. A. B., Johns Hopkins University, 1894.	Wellham	*Wellham*
Calvert, William Jephtha A. B., University of Kentucky, 1893; Graduate Student, Kentucky State College, 1893–94.	Lexington, Ky.	422 *N. Broadway*
Cassidy, Patrick Joseph A. B., Yale University, 1894.	Norwich, Conn.	1727 *Fairmount Av.*
Church, Cornelia Chapel A. B., Smith College, 1888.	Pasadena, Cal.	135 *Jackson Place*
Coe, John Williams, Jr. Ph. B., Yale University, 1893.	Meriden, Conn.	1734 *E. Fayette St.*
Cox, Walter A. B., Johns Hopkins University, 1894.	Bel Alton	*Bel Alton, Md.*
Dawson, Percy Millard A. B., Johns Hopkins University, 1894.	Montreal, Canada	*The Altamont*
Elting, Arthur Wells A. B., Yale University, 1894.	Upper Red Hook, N. Y.	412 *N. Broadway*
Ford, William Weber A. B., Adelbert College, 1893.	Norwalk, O.	718 *N. Howard St.*
Hastings, Thomas Wood A. B., Johns Hopkins University, 1894.	Morristown, N. J.	9 *W. Chase St.*
Herrick, Alfred Birch A. B., Williams College, 1894.	Amsterdam, N. Y.	812 *N. Broadway*
Johnstone, Mary Margaret Sewall A. B., Smith College, 1894; Harvard Summer School, 1894.	Newburyport, Mass.	417 *N. Charles St.*
Knox, James Hall Mason, Jr. A. B., Yale University, 1892, and Ph. D., 1894.	Baltimore	13 *E. Preston St.*
Langfeld, Millard A. B., Johns Hopkins University, 1893.	Baltimore	2226 *Eutaw Place*
Light, Gertrude S. B., University of Wisconsin, 1894.	Milwaukee, Wis.	417 *N. Charles St.*
Lupton, Frank Allemong S. B., Alabama Polytechnic Institute, 1891, and M. S., 1892; Graduate Student, Johns Hopkins University, October to January, 1893–94.	Auburn, Ala.	16 *S. Broadway*
Madison, James Daniel S. B., University of Wisconsin, 1894.	Mazomanie, Wis.	1734 *E. Fayette St.*
Marshall, Harry Taylor A. B., Johns Hopkins University, 1894.	Baltimore	1209 *St. Paul St.*
O'Connell, Delia Maria A. B., Vassar College, 1893; Graduate Student, Mass. Institute of Technology, 1893–94.	Marlborough, Mass.	135 *Jackson Pl.*
Perkins, Roger Griswold A. B., Union College, 1893, and Harvard University, 1894.	Schenectady, N. Y.	1128 *McCulloh St.*
Porter, Katherine A. B., Bryn Mawr College, 1894.	Baltimore	2100 *N. Calvert St.*

PRATT, JOSEPH HERSEY Ph. B., Yale University, 1894.	North Middleboro, Mass.	1640 *E. Fayette St.*
SANDS, GEORGIANA A. B., Vassar College, 1893; Graduate Student, Barnard College (N. Y.), 1893-94.	Port Chester, N. Y.	851 *N. Eutaw St.*
SCHENCK, BENJAMIN ROBINSON A. B., Williams College, 1894.	Syracuse, N. Y.	812 *N. Broadway*
STEINER, WALTER RALPH A. B., Yale University, 1892, and A. M., 1895; Graduate Student, Johns Hopkins University, 1892-94.	Baltimore	1038 *N. Eutaw St.*
WALKER, EMMA ELIZABETH A. B., Smith College, 1887.	Parkersburg, W. Va.	417 *N. Charles St.*
WHITRIDGE, ANDREW HENDERSON S. B., Harvard University, 1894.	Baltimore	18 *W. Read St.*
WOLFE, KATHERINE MARGARET B. L. and S. B., Adrian College (Mich.), 1889; Graduate Student, Yale and Chicago Universities, 1892-94	Tiffin, O.	118 *Jackson Place*

(29)

Second Year

BROWN, LAWRASON A. B., Johns Hopkins University, 1895.	Baltimore	1517 *Bolton St.*
BROWNELL, EDWARD ERLE Ph. B., Yale University, 1895.	Woodland, Cal.	1005 *N. Charles St.*
BUCKLER, HUMPHREY WARREN A. B., Johns Hopkins University, 1895.	Baltimore	806 *Cathedral St.*
COLE, RUFUS IVORY S. B., University of Michigan, 1896.	Peru, Ill.	1727 *Fairmount Av.*
DAVIS, FRANK CURTISS A. B., Amherst College, 1895.	Minneapolis, Minn.	1005 *N. Charles St.*
DAVIS, JOHN STAIGE Ph. B., Yale University, 1895.	Sault Ste Marie, Mich.	517 *Cathedral St.*
EMERSON, CHARLES PHILLIPS A. B. Amherst College, 1894.	Methuen, Mass.	103 *Jackson Place*
EPLER, BLANCH N. S. B., University of California, 1895.	Oakland, Cal.	129 *E. North Av.*
ERLANGER, JOSEPH S. B., University of California, 1895.	San Francisco, Cal.	1640 *E. Fayette St.*
EVANS, PHILIP SAFFERY, JR. A. B., Yale University, 1895.	Baltimore	116 *Jackson Place*
FOLLIS, RICHARD HOLDEN, JR. Ph. B., Yale University, 1895.	San Francisco, Cal.	517 *Cathedral St.*
FULTON, FRANK TAYLOR S. B., Knox College, 1894; A. B., Johns Hopkins University, 1895.	Warsaw, Ill.	1734 *E. Fayette St.*
GALLAGHER, JAMES DATON A. B., Johns Hopkins University, 1895.	Steubenville, O.	707 *N. Broadway*
HARRIS, HENRY A. B., Leland Stanford Jr. University, 1895.	Olympia, Wash.	521 *N. Wolfe St.*

Hoye, Henry Joseph A. B., Brown University, 1895.	Providence, R. I.	512 *N. Broadway*
Ladd, Louis Williams A. B., Yale University, 1895.	New Haven, Conn.	116 *Jackson Place*
Little, Charles Sumner A. B., Wabash College, 1894.	Evansville, Ind.	1006 *N. Broadway*
Luetscher, John Arthur S. B., University of Wisconsin, 1895.	Sauk City, Wis.	104 *Jackson Place*
Lynch, Frank Worthington A. B., Adelbert College, 1895.	Cleveland, O.	718 *N. Howard St.*
Magee, Chester Lea A. B. and A. M., Leland Stanford Jr. University, 1895–96	San Francisco, Cal.	519 *N. Wolfe St.*
Moore, Hugh Miller S. B. and M. S., Miami University, 1895.	Oxford, O.	1033 *N. Broadway*
Oliver, Edward Spiller A. B., Johns Hopkins University, 1895.	Baltimore	1725 *Bolton St.*
Ottley, Charles Williams A. B., Princeton College, 1893.	Atlanta, Ga.	1727 *Fairmount Av.*
Owsley, Paul Octavius Ph. B., Yale University, 1895.	Chicago, Ill.	517 *Cathedral St.*
Pleasants, Jacob Hall, Jr. A. B., Johns Hopkins University, 1895.	Baltimore	606 *Cathedral St.*
Rosenheim, Sylvan A. B., Johns Hopkins University, 1895.	Baltimore	521 *N. Wolfe St.*
Sampson, John Albertson A. B., Williams College, 1895.	Troy, N. Y.	103 *Jackson Place*
Steele, Harry Merriman Ph. B., Yale University, 1894.	Waterbury, Conn.	*The Albany*
Steensland, Halbert Severin S. B., University of Wisconsin, 1895.	Madison, Wis.	104 *Jackson Place*
Stone, William Ridgely A. B., Princeton College, 1895.	Washington, D.C.	113 *W. Mulberry St.*
Strobel, Edgar Randolph A. B., Johns Hopkins University, 1895.	Baltimore	1713 *E. Baltimore St.*
Verhoeff, Frederick Herman Ph. B., Yale University, 1895.	Louisville, Ky.	1727 *Fairmount Av.*
Williams, William Whitridge A. B., Johns Hopkins University, 1895.	Baltimore	1128 *Cathedral St.*
Wyckoff, Sarah Delia S. B., Wellesley College, 1894.	Dayton, O.	1910 *E. Madison St.*
Yates, Lawrence Ph. B., Yale University, 1894; S. B., University of Wisconsin, 1895.	Milwaukee, Wis.	1005 *N. Charles St.*

(35)

First Year

Akerman, Joseph Athens, Ga. 1727 *Fairmount Av.*
A. B., University of Georgia, 1894, and Graduate Student, 1895–96.

Allen, Herbert Williams Oakland, Cal. 812 *N. Broadway*
S. B., University of California, 1896.

Austin, Mabel Fletcher St. Paul, Minn. 804 *N. Broadway*
S. B., University of Minnesota, 1893.

Beale, Alma Emerson Schaghticoke, N. Y. 2520 *E. Baltimore St.*
A. B., Wellesley College, 1891; Marine Biological Laboratory, Woods Holl, 1893.

Bettmann, Milton Cincinnati, O. 1705 *Fairmount Av.*
A. B., Harvard University, 1897.

Briggs, Evelyn Sacramento, Cal. 801 *N. Broadway*
A. B., Leland Stanford Jr. University, 1896.

Brülle, Herman Fredericksburg, Va. 1005 *N. Fulton Av.*
A. B. and S. B., Hampden-Sidney College, 1895; Graduate Student, Johns Hopkins University, 1895–96.

Burnam, Curtis Field Richmond, Ky. 1128 *McCulloh St.*
A. B., Central University (Ky.), 1895; Graduate Student, Johns Hopkins University, 1895–96.

Chase, Eleanor Sarah Fall River, Mass. 127 *Jackson Place*
S. B., Wellesley College, 1894.

Chittenden, Arthur Smith Binghamton, N. Y. 1757 *Jefferson St.*
A. B., Yale University, 1896.

Christian, Henry Asbury Lynchburg, Va. 144 *Jackson Place*
A. B. and A. M., Randolph-Macon College, 1895, and Graduate Student, 1895–96.

Dancy, William Remshart Savannah, Ga. 802 *N. Broadway*
S. B., University of Georgia, 1896.

Eggers, Augustus Hartje Allegheny, Pa. 806 *N. Broadway*
Ph. B., Yale University, 1896.

Evans, Henry Courtney Youngstown, O. 718 *N. Howard St.*
A. B., Adelbert College, 1896.

Fairbank, Rose Hatfield, Mass. 318 *N. Broadway*
A. B., Smith College, 1895.

Fisher, Arthur Lawrence San Francisco, Cal. 1640 *E. Fayette St.*
S. B., University of California, 1896.

Fisher, William Alexander, Jr. Baltimore, Md. 905 *Cathedral St.*
A. B., Princeton University, 1896.

Fletcher, Howard Warrenton, Va. 1757 *Jefferson St.*
A. B., Randolph-Macon College, 1895, and Graduate Student, 1895–96.

Flint, Joseph Marshall Chicago, Ill. *Evergreen, Charles St. Av.*
S. B., University of Chicago, 1895.

Healy, William Patrick Bridgeport, Conn. 806 *N. Broadway*
Ph. B., Yale University, 1896.

Hendrickson, William Faithful Baltimore, Md. 236 *N. Carey St.*
A. B., Johns Hopkins University, 1896.

Kellog, William Crissey New Canaan, Conn. 806 *N. Broadway*
A. B., Yale University, 1896.

Kyes, Preston A. B., Bowdoin College, 1896.	North Jay, Me.	813 *N. Broadway*
Lewis, Warren Harmon S. B., University of Michigan, 1896.	Oak Park, Ill.	116 *Jackson Place*
Little, Harry Wilson S. B., Wabash College, 1896.	Evansville, Ind.	1006 *N. Broadway*
Lowell, Ellen Louise A. B., Leland Stanford Jr. University, 1896.	Calais, Me.	811 *N. Broadway*
MacCallum, John Bruce A. B., University of Toronto, 1896.	Dunnville, Ont.	1200 *Guilford Av.*
Marvell, Mary Wilbur S. B., Wellesley College, 1894.	Fall River, Mass.	127 *Jackson Place*
Meltzer, Clara R. A. B., Barnard College, 1896.	New York, N. Y.	214 *N. Broadway*
Mosher, Clelia Duel A. B., Leland Stanford Jr. University, 1893, and A. M., 1894.	Stanford Univ., Cal.	811 *N. Broadway*
Myrick, Hannah Glidden A. B., Smith College, 1896.	Dorchester, Mass.	129 *Jackson Place*
Odell, Anna A. B., Vassar College, 1896.	Detroit, Mich.	801 *N. Broadway*
Rand, Richard Foster Ph. B., Yale University, 1895, and Graduate Student, 1895–96.	Meriden, Conn.	1707 *Fairmount Av.*
Reed, Dorothy M. B. L., Smith College, 1895; Graduate Student, Mass. Institute of Technology, 1895–96.	Leyden, N. Y.	804 *N. Broadway*
Rusk, Glanville Yeisley A. B., Johns Hopkins University, 1896.	Baltimore, Md.	2000 *E. Baltimore St.*
Sabin, Florence Rena S. B., Smith College, 1893; Assistant in Zoölogy, Smith College, 1895–96.	Denver, Col.	129 *Jackson Place*
Sowers, William Francis Mattingly A. B., Princeton University, 1896.	Washington, D. C.	517 *Cathedral St.*
Stone, Ellen Appleton A. B., Radcliffe College, 1895; A. M., Brown University, 1896.	Providence, R. I.	214 *N. Broadway*
Thayer, Lawrence Hawthorn A. B., Denison University, 1896.	Granville, O.	216 *W. Madison St.*
Warren, Mortimer A. B., Bowdoin College, 1896.	Cumberland Mills, Me.	813 *N. Broadway*
West, John Montgomery A. B., Johns Hopkins University, 1896.	Baltimore, Md.	2419 *Maryland Av.*
Woolley, Paul Gerhardt S. B., University of Chicago, 1896.	Chicago, Ill.	1428 *McCulloh St.*

(42)

Summary

Fourth Year	17
Third Year	29
Second Year	35
First Year	42
	123

GENERAL STATEMENT

The Medical Department of the Johns Hopkins University was opened for the instruction of students October, 1893. This School of Medicine is an integral and coördinate part of the Johns Hopkins University, and it also derives great advantages from its close affiliation with the Johns Hopkins Hospital.

The required period of study for the degree of Doctor of Medicine is four years. The academic year begins on the first of October and ends the middle of June, with short recesses at Christmas and Easter.

The course of instruction is planned for the professional education of those who have received a liberal education, as indicated by a collegiate degree in arts or science, including a reading knowledge of French and German and adequate training in those branches of science, such as physics, chemistry and biology, which underlie the medical sciences. Men and women are admitted upon the same terms.

In the methods of instruction especial emphasis is laid upon practical work in the Laboratories and in the Dispensary and Wards of the Hospital. While the aim of the School is primarily to train practitioners of medicine and surgery, it is recognized that the medical art should rest upon a suitable preliminary education and upon thorough training in the medical sciences. The first two years of the course are devoted mainly to practical work, combined with demonstrations, recitations and, when deemed necessary, lectures, in the Laboratories of Anatomy, Physiology, Physiological Chemistry, Pharmacology and Toxicology, Pathology and Bacteriology. During the last two years the student is given abundant opportunity for the personal study of cases of disease, his time being spent largely in the Hospital Wards and Dispensary and in the Clinical Laboratories.

Inquiries may be addressed to the Registrar of the Johns Hopkins Medical School.

REQUIREMENTS FOR ADMISSION

As candidates for the degree of Doctor of Medicine the school receives:

1. Those who have satisfactorily completed the Chemical-Biological course which leads to the A. B. degree in this university.

2. Graduates of approved colleges or scientific schools who can furnish evidence: (*a*) That they have acquaintance with Latin and a good reading knowledge of French and German; (*b*) That they have such knowledge of physics, chemistry, and biology as is imparted by the regular minor courses given in these subjects in this university.

The phrase "a minor course," as here employed, means a course that requires a year for its completion. In physics, four class-room exercises and three hours a week in the laboratory are required; in chemistry and biology, four class-room exercises and five hours a week in the laboratory in each subject.

Many inquiries have been received regarding the character and amount of the requisite training indicated by the term "Minor Course" in these sciences. In explanation, it may be stated, with respect to Biology, that the candidate should have followed for at least a year a laboratory course in the structure, life history, and vital activities of selected types of animal and vegetable life. In the Chemical-Biological course for undergraduates in this university the laboratory work in biology at present includes the study of such types as amœba, hæmatococcus, yeast, penicillium, bacteria, mushroom, hydra, vorticella, a fern, a flowering plant, the earthworm, lobster, anodon; the gross and minute anatomy of the frog, the development of its eggs, the structure, formation, and metamorphoses of the tadpole; the study and drawing of the bones of the human skeleton; the comparison of some parts of related vertebrate skeletons; dissection of a mammal; the field and laboratory study of some few flowering plants. The laboratory work is the more important part, the lectures and other exercises subsidiary. It is, of course, not to be understood that this curriculum of biological work must be rigidly followed. Courses in botany and zoölogy will be accepted as equivalent to the minor course in biology in this university, provided the work in the laboratory has been adequate. It is important that the candidate should show ability to observe natural objects, to record the observations in words and by drawings, and to use the microscope.

The candidate should have followed a course in general Chemistry for at least a year. This course should include laboratory work, about five hours a week through one year, and lectures and class-room work covering the outlines of inorganic chemistry and the elements of organic chemistry. A good knowledge of the subject as presented in Remsen's "Introduction to the Study of Chemistry" may be regarded as the minimum requirement. A fuller knowledge of Chemistry is desirable.

In Physics, the candidate should have followed a collegiate course for at least one year. This should include four hours a week of class-room work and at least three hours a week of quantitative work in the laboratory. Special attention should be given to theoretical mechanics and to the mechanical and electrical experiments.

3. Those who give evidence by examination that they possess the general education implied by a degree in arts or in science from an approved college or scientific school, and the knowledge of French, German, Latin, physics, chemistry, and biology above indicated.

Applicants for admission will receive blanks to be filled out relating to their previous courses of study.

They are required to furnish certificates from officers of the colleges or scientific schools where they have studied, as to the courses pursued in physics, chemistry, and biology. If such certificates are satisfactory, no examination in these subjects will be required from those who possess a degree in arts or science from an approved college or scientific school.

Candidates who have not received a degree in arts or in science from an approved college or scientific school, will be required (1) to pass, at the beginning of the session in October, the matriculation examination for admission to the collegiate department of the Johns Hopkins University, (2) then to pass examinations equivalent to those taken by students completing the Chemical-Biological course which leads to the A. B. degree in this University, and (3) to furnish satisfactory certificates that they have had the requisite laboratory training as specified above. It is expected that only in very rare instances will applicants who do not possess a degree in arts or science be able to meet these requirements for admission.

Hearers and special workers, not candidates for a degree, will be received at the discretion of the Faculty.

ADMISSION TO ADVANCED STANDING

Applicants for admission to advanced standing must furnish evidence (1) that the foregoing terms of admission as regards preliminary training have been fulfilled, (2) that courses equivalent in kind and amount to those given here, preceding that year of the course for admission to which application is made, have been satisfactorily completed, and (3) must pass examinations at the beginning of the session in October in all the subjects that have been already pursued by the class to which admission is sought. Certificates of standing elsewhere cannot be accepted in place of these examinations.

GENERAL PLAN OF INSTRUCTION

The first two years of the course are devoted mainly to the fundamental medical sciences, a large part of the time being spent in practical work in the Laboratories. In the latter two years medicine, surgery, obstetrics, and the various specialties are studied in the Clinical Laboratories, the Dispensary, and the wards of the Hospital.

The principal studies of the first year are human anatomy, normal histology, microscopic anatomy, embryology, physiology, and physiological chemistry.

The study of anatomy and of physiology is continued in the second year. Throughout the second year general pathology, pathological anatomy and histology, pharmacology and toxicology are studied. A practical course in bacteriology, with the chief emphasis upon its hygienic and medical bearings, is given during three months of this year.

Upon the basis of thorough training in the fundamental medical sciences, pursued during the first two years of the course, the student should now be well fitted to undertake the study of practical medicine and surgery.

During the third year the general principles of medicine, surgery and obstetrics are studied, and clinical instruction in medicine and surgery is given. The study of certain special branches of medicine is also begun. Leading features of the work of this year are the courses in the Clinical Laboratories and practical work in the Dispensary.

During the fourth year the practical study of medicine, surgery, and obstetrics is continued, and instruction is given in gynecology and the various special branches of medicine and surgery, viz: dermatology, diseases of children, diseases of the nervous system, genito-urinary diseases, laryngology and rhinology, ophthalmology and otology, and psychiatry. In this year the students serve as clinical clerks and surgical dressers in the wards of the Hospital and are in daily attendance upon special classes in the Dispensary. They also attend cases of labor in the obstetrical wards of the Hospital, and, under proper supervision, in the homes of patients. For the ward and dispensary work the class is divided into small groups. The arrangement of the work during the third and fourth years is such that each student is given excellent opportunities for the direct personal examination of patients in the Dispensary and Hospital.

Instruction in hygiene, legal medicine, medical zoölogy, and medical history is provided during the course.

Work in the dissecting room, in the laboratory, and at the bedside, demonstrations, clinics, lectures, and recitations are the main features of the methods of instruction. Purely didactic lectures occupy a subsidiary position, as compared with instruction by recitations and demonstrations and especially by practical work in the various laboratories, in the Hospital wards, and in the Dispensary. In consequence of the high standard of admission, the classes are not likely to be excessively large, and abundant opportunity is therefore afforded for practical work for each student and for personal contact between teacher and student.

LABORATORIES

The Physiological Laboratory is in the Biological Building of the University, which is a large four-story structure well arranged and equipped for its special purposes.

The Anatomical and the Pharmacological Laboratories occupy the Women's Fund Memorial Building, which was erected in 1894 upon a large plot of ground owned by the University opposite the Hospital. This is a commodious building, three stories in height, constructed for the accommodation of the various anatomical laboratories. In the basement is a cold-storage plant for the preservation of bodies for dissection. The first story is for the present occupied by the department of pharmacology, which is well supplied with the necessary collections and apparatus for the practical and experimental study of this subject. The two upper stories are fitted with all the necessary apparatus for instruction and research in embryology, histology, and gross anatomy. Instead of one large dissecting room, there are a number of smaller dissecting rooms of varying size, which thus afford the best opportunity for the work for which they are intended. There is a good collection of anatomical preparations, models, casts, and diagrams available for the use of students. This building contains rooms for photo-micrography and for dark-room projections.

The Pathological Laboratory is a four-story building on the grounds of the Hospital. This building contains the morgue and the autopsy theatre, the pathological museum, and rooms for intruction and research in bacteriology, pathological anatomy and histology, and experimental pathology. The class rooms are commodious and well lighted. There is ample supply of material for study in all departments of pathology and in bacteriology.

The Laboratory of Physiological Chemistry occupies for the present the third story of the Pathological Building.

The Clinical Laboratory occupies two stories added in 1896 to one of the Hospital buildings. The funds contributed for this were a generous gift to the Hospital. This laboratory contains two large class rooms, for students of the third and the fourth years, respectively, and several smaller rooms for special departments of practical medicine and surgery and for the director, assistants, and special workers. Here the students are taught during the last two years of the course the physical, chemical, microscopical, and bacteriological methods of studying the blood, secretions, parasites, and morbid products with direct relation to their bearings on diagnosis and other practical aspects of clinical medicine and surgery.

CLINICAL OPPORTUNITIES

Abundant and varied clinical material is afforded by the Johns Hopkins Hospital and Dispensary. The Medical Department of the University is in close connection with this large and well-equipped Hospital and derives signal advantages from the resources of this institution. Professors in the Medical School, with their assistants, have entire charge of the practice in the Hospital and the Dispensary, which furnish ample material for clinical instruction in the various branches of medicine and surgery, including the specialties. The new lying-in department of the Hospital was opened in 1896. This, together with the out-patient obstetrical service, supply good opportunities for practical training in obstetrics. The clinical amphitheatre and operating rooms are in the Hospital buildings.

Especially advantageous for thorough clinical training are the arrangements by which the students, divided into groups, engage in practical work in the Dispensary, and throughout the fourth year serve as clinical clerks and surgical dressers in the wards of the Hospital, as will be explained subsequently.

Practical instruction in mental diseases is given by the Professor of Psychiatry and the Associate in Neuro-Pathology in the City Asylum at Bay View.

REGULATIONS REGARDING MICROSCOPES

The character of the practical work requires that each student, during each year of the course, shall be supplied with a microscope, and every student is recommended to purchase one. Each student who does not possess a microscope is furnished with one, which he retains for his own use throughout the academic year, at a yearly rental of five dollars.

LIBRARIES, MEDICAL SOCIETIES AND PUBLICATIONS

In the main building of the Hospital is a medical library with full sets of medical periodicals. The various special laboratories possess also appropriate libraries. These, as well as the libraries and reading room at the University and those of the Peabody Institute, are available without charge for the use of medical students.

Three associations, the Hospital Medical Society, the Historical Club, and the Journal Club meet in the Assembly Room of the Hospital, one each Monday evening throughout the academic year, and are open to students.

The Bulletin of the Johns Hopkins Hospital, issued monthly, and now in the eighth year of its publication, contains articles by those connected with the Medical School and Hospital and the proceedings of the Hospital Societies. The Johns Hopkins Hospital Reports, of which seven volumes have been issued, contain the larger monographs and results of researches in the Hospital and the Pathological and Clinical Laboratories.

COURSES OF INSTRUCTION

The following statements are designed to exhibit the opportunities and the character of the instruction and practical work in each department.

ANATOMY

The instruction in Anatomy is in charge of Dr. Franklin P. Mall, Professor of Anatomy, with the coöperation of Dr. Lewellys F. Barker, Associate Professor of Anatomy, Dr. J. Williams Lord, Instructor in Anatomy, and Dr. Ross G. Harrison, Instructor in Anatomy.

The course in Anatomy consists of vertebrate embryology, histology and histogenesis, and gross and microscopic human anatomy. The course in histology is completed during the first year. That in gross anatomy begins, in October of the first year, with osteology, and continues with practical anatomy during the first and second years. It is recommended that the student complete the greater part of one dissection of the body during the first academic year.

The instruction in histology and microscopic anatomy consists mainly of practical work in the laboratory, but it is supplemented by a series of morning lectures with demonstrations, exhibitions of charts and models, and dark-room projections. The course begins October first and continues until March fifteenth. The regular class work is arranged so as to occupy three full forenoons each week and additional time is provided for special work in technique and for recitations. The elementary tissues are studied chiefly by teasing, dissecting, macerating, and digesting, in the early part of the course, and later the architecture of the organs and the search for morphological units in these are taken up. In the study of the organs emphasis is laid on the naked-eye appearances of the tissues, and the student is at all times urged to pass as gradually as possible from the macroscopic appearances to the microscopic pictures as seen with high powers. The work which the student has before him in subsequent years is borne in mind and extensive use is made of human tissues. Throughout, the attempt is made to direct the student's training along the lines which will be most serviceable to him in his physiological and pathological studies.

The course terminates with the finer anatomy and histology of the central nervous system and the sense organs, to which six weeks' time is allotted, and during which the student is familiarized with some of the modern methods of neurological investigation. Text-books in English, French, and German are used in the course, and the student is referred to original articles in the literature of each department of the subject and is encouraged to read and abstract some of them.

In connection with the work in histology, considerable attention is paid to the morphological and histogenetic relations of the tissues, with the aim of throwing as much light as possible upon the developmental relations of the tissues and the bearing of these upon human anatomy in general.

From March 15 to June 1 considerable time is available for review or for additional work in this subject.

Parallel with the above course that on human Anatomy is given.

The anatomical course begins the first of October with demonstrations and recitations in osteology. A complete set of bones is loaned to each student for the first year to enable him to become well acquainted with the bones of the human body.

Human anatomy is taught in the dissecting-room, as soon as the cool weather sets in. The laboratory is furnished with a cold storage apparatus, which provides a constant and abundant supply of excellent anatomical material.

The work of each student is conducted independently of that of all others. It is continuous until he has dissected and studied the whole body, and then he may rework any portion of the body or undertake special dissections. During the winter months of the first two years of the course sufficient time is available for the thorough study of anatomy by dissections.

Applied anatomy is taught by the professors or instructors in various practical branches of medicine and surgery.

In addition to the systematic courses given in anatomy, every opportunity is afforded to advanced students who are prepared to undertake original investigations.

The laboratory is well provided with apparatus and material for experimentation upon animals, as well as for research in vertebrate embryology, histology, neurology, and anatomy. The new anatomical laboratories in the Women's Fund Memorial Building are large enough to meet all these requirements. There is an abundance of well lighted and well ventilated rooms. There are many models and charts, a cold storage apparatus for the preservation of anatomical material, and an extensive photographic outfit.

PHYSIOLOGY

The instruction in Physiology is under the charge of Dr. William H. Howell, Professor of Physiology, assisted by Dr. George P. Dreyer, Associate in Physiology. The course extends from January 1 of the first year to January 1 of the second year.

The work consists of lectures, experimental work in the laboratory, demonstrations, and recitations. The lectures are fully illustrated by experiments and demonstrations given in the lecture-room. Weekly recitations are held upon the subject matter covered by the lectures.

The laboratory course is arranged to occupy six hours a week for about twelve weeks. In this course the students are required to perform the simpler experiments upon muscle, nerve, circulation, and vision, making use of the various graphic methods employed in physiology. The work is intended to give an idea of the methods used in experimental physiology, and to furnish also that basis of actual acquaintance with facts which is necessary for intelligent reading.

In addition to the foregoing exercises, which comprise the required work, students are given opportunities to participate in the more advanced courses and intended primarily as graduate work. These courses are as follows: A physiological journal club meets weekly to discuss the recent literature in animal physiology and histology. A physiological seminary meets weekly during the year. The object of the seminary work is to study carefully by means of lectures or readings some special part of physiology, the topics chosen varying each year. An advanced course of laboratory work is arranged,—intended to teach the methods of physiological demonstration and research. This course is under the control of the professor of physiology, and is not limited as to time or amount of work, with the exception that assistance from the professor must be arranged for by definite engagements. It is designed for those who expect to become teachers or investigators in physiology, pathology, or pharmacology, and the number permitted to take it is necessarily limited. For purposes of research the laboratory is well equipped.

PHYSIOLOGICAL CHEMISTRY

The instruction in Physiological Chemistry is under the charge of Dr. John J. Abel, Professor of Pharmacology, and of Thomas B. Aldrich, Ph. D., Associate in Physiological Chemistry, with the aid of Dr. Walter Jones, Assistant in Physiological Chemistry.

Instruction in this branch is given by laboratory work, illustrated lectures, and conferences of a less formal character. The work in the laboratory begins the first of March and continues, with daily exercises, until the end of the first year of the course.

In the lectures the substances that have been isolated from the fluids and tissues of the body are considered chiefly with regard to their connection with physiological processes. The physical and chemical properties of these substances and their chemical relationships also receive due attention whenever they promise to throw light on animal metabolism, for it is thought that a treatment of the subject which emphasizes the chemical properties of the constituents of the body, will best prepare the student to meet important questions that will arise later in his study of pathology, pharmacology, hygiene, and practical medicine.

The laboratory instruction covers the following ground:

1. The isolation of the more important constituents of the various tissues and fluids of the body, of its secretions and excretions, and the study of such of the physical and chemical properties of these constituents as are of most importance from the physiological point of view.
2. Selected qualitative and quantitative methods employed in the study of the various tissues, the products of gastric and pancreatic digestion, and of putrefactive processes, the urine, blood, bile, biliary and renal calculi, milk, pus, and faeces.
3. The synthetic formation of some of the constituents of the body, such as urea, hippuric acid, cholin, leucin, etc.,—when the student has completed the work under 1 and 2.

PHARMACOLOGY AND TOXICOLOGY

The instruction in Pharmacology and Toxicology is under the direction of Dr. John J. Abel, Professor of Pharmacology, aided by Dr. Albert C. Crawford, Assistant in Pharmacology. Dr. Walter Jones, Assistant in Physiological Chemistry, also assists in teaching Toxicology. Instruction in these branches is given mainly in the second year of the course by illustrated lectures and laboratory work two afternoons a week from the first of January to the end of the academic year, and in addition one recitation a week is held.

Toxicology.—The work in Toxicology covers about nine weeks.

The actual work of detecting poisons is preceded by a short course in experimentation on anæsthetized animals, partly physiological and partly chemical in character. Some of the points illustrated in this preliminary course are the rapidity of dispersion of drugs throughout the body, the paths of elimination for drugs, the storage of drugs in the various tissues and organs, the varied symptoms of poisoning, changes in the blood, the grosser lesions produced by powerful poisons, and the chemical changes effected in the drug itself in its passage through the body. The general principles of toxicological analysis are then illustrated by actual practice in the laboratory, and the student is taught how to proceed in a methodical manner in the search for poisons. As a part of the course poisons and drugs are mixed with cooked food and given out to the students as "unknowns" for analysis.

Pharmacology.—The remainder of the year is devoted to the study of the pharmacological action of drugs. The course in Pharmacology, like that in Toxicology is largely a laboratory course, students working in sections of four or a less number according to the nature of the experiment.

The practical work in experimentation on anæsthetized animals includes such topics as the action of drugs on the heart, vessels and vasomotor apparatus, on the respiratory apparatus, the eye, brain and spinal cord, voluntary muscles, kidneys, salivary and sweat glands, intestine, etc. The chemical side of Pharmacology also receives due attention. The fate of drugs in the organism, their influence on the metabolism of the body and the manner of their excretion are fully treated in lectures and illustrated wherever possible.

In the first part of the third year the uses of drugs are considered, their dosage and the manner of prescribing and dispensing them, thus preparing for the actual practice in prescribing and dispensing drugs which is obtained in connection with the practical clinical work of the third and fourth years.

Pharmacy is treated in a special course of illustrated lectures.

A course of lectures and recitations on Foods in Health and Disease is given in conclusion.

For both of the above courses a fair knowledge of chemistry and of the methods of the physiological laboratory is presupposed.

PATHOLOGY AND BACTERIOLOGY

The instruction in Pathology and Bacteriology is under the charge of Dr. William H. Welch, Professor of Pathology, with the coöperation of Dr. Simon Flexner, Associate Professor of Pathology, of Dr. Louis E. Livingood, Assistant in Pathology, and of an Assistant in Bacteriology.

General and Special Pathological Anatomy and Histology, General Pathology, and Bacteriology are taught by lectures, recitations, demonstrations, and laboratory work. These courses continue throughout the second year. The laboratory work occupies three half-days a week throughout the year.

I. The Autopsies are held in the Pathological Building and are witnessed by the students of the second, third, and fourth years. Instruction is given in the methods of making post-mortem examinations and of recording in proper protocols the results.

II. Gross Morbid Anatomy is studied at the autopsy table and by demonstrations of fresh and preserved specimens.

III. The course in Bacteriology precedes that in Pathological Histology. It begins in October and continues for three months, occupying three half-days a week. It is a practical laboratory course in which the students become familiar with the preparation of culture media, the principles of sterilization and disinfection, the methods of cultivating, staining, and studying bacteria, the biological examination of air, water, and soil, and the important species of known pathogenic micro-organisms. The hygienic, as well as the pathological, relations of bacteriology are considered.

IV. A course of lectures devoted mainly to the consideration of infection and immunity is given during the period of practical work in bacteriology.

V. The principal subjects in General Pathology are taken up systematically and taught by lectures and, as far as practicable, by actual demonstration and experiments in the laboratory.

VI. Pathological Histology is taught as a part of Pathological Anatomy, the description and demonstration of gross lesions being followed by microscopical examination of the same lesions. Much use is made of frozen sections of fresh organs. The course begins with the study of inflammation, and in regular order the pathological anatomy and histology of the different tissues and organs of the body are taken up. Microscopical sections are given to be stained, mounted, and carefully studied and drawn. Instruction in the technique of making pathological examinations, including the methods of pathological histology, and practice in pathological diagnosis are afforded.

VII. A recitation is held once a week throughout the year.

Didactic and demonstrative lectures are given upon subjects which can not be satisfactorily treated in the laboratory.

In addition to the courses for undergraduate students, opportunity is afforded for advanced work and special research in Pathological Anatomy and Histology, Experimental Pathology, and Bacteriology. For these purposes the Pathological Laboratory is well equipped with the necessary apparatus and material.

MEDICINE (INCLUDING CLINICAL MICROSCOPY)

The instruction in this department is under the charge of Dr. Wm. Osler, Professor of Medicine, with whom are associated Dr. W. D. Booker, Clinical Professor of the Diseases of Children, Dr. H. M. Thomas, Clinical Professor of Diseases of the Nervous System, Dr. W. S. Thayer, Associate Professor of Medicine, Dr. T. B. Futcher, Associate in Medicine, and Drs. Frank R. Smith and H. B. Jacobs, Instructors in Medicine.

The teaching is in the Dispensary, in the Clinical Laboratory, and in the Wards.

The work of the Third Year is as follows:

I. Demonstrations in Medical Anatomy and Physiology. These comprise a review of the Topographical Anatomy of the viscera, and a consideration of the normal functions and physical signs of the organs in health, so far as they relate to practical medicine.

II. Instruction in History-Taking. After a brief didactic introduction, the students learn the method of history-taking, by obtaining the anamnesis of patients in the Dispensaries.

III. The Practical Study of the Symptoms and Signs of Disease. The work of the year consists largely in a systematic study of the symptoms of disease. Throughout the session the class meets in the clinical rooms of the Dispensary on Tuesday, Thursday and Saturday, from eleven to one o'clock. At eleven o'clock Dr. Thayer, with his assistants, takes the class in three groups for Physical Diagnosis and routine practice in methods of examination. Cases are selected from the out-patients, and special cases are also taken from the wards. At twelve o'clock Dr. Osler takes the entire class, and the students in rotation examine patients selected from the medical dispensaries. The teaching consists in: (*a*) thorough consideration of the clinical features presented by the case; (*b*) brief discussion of the symptoms; (*c*) the student who examines the case being asked to report at a subsequent meeting on some special point in the literature, or on some unusual symptom presented by the case. This last plan has proved most useful to the student, and very instructive, particularly in directing attention to the gradual growth of our knowledge of certain diseases, or of methods of treatment.

IV. Clinical Laboratory. During two afternoons of the week throughout the session Dr. Futcher, the Associate in Medicine, meets the class in the Clinical Laboratory, in which one of the large rooms is devoted to the third-year students exclusively. Each student has a separate place, with his own microscope and necessary apparatus. The course is a systematic one, embracing the methods of examining blood, urine, sputum, faeces, etc. The laboratory is open all day for the use of the students during spare time.

V. Recitations. At stated intervals recitations are held, in which the progress of the student is tested, and in which theoretical considerations are discussed.

VI. Clinics. At twelve o'clock on Wednesday the students attend the Medical Clinic in the Amphitheatre.

The work of the Fourth Year in general medicine is as follows:

The students are divided into four equal groups, each group serving for two months successively in the medical, surgical, obstetrical, and gynecological divisions of the Hospital.

I. Ward-work. The group of students assigned to the medical wards divide the cases between them, and for two months act as clinical clerks, taking the history of the patients, making the examination of the urine, etc., under the direction of the House Physician, and receiving special instruction during the ward visits.

II. Ward Classes. At 9 a. m. on Monday, Wednesday and Friday, Dr. Osler takes the class in the wards, and on Tuesday, Thursday and Saturday at the same hour Dr. Thayer. Special instruction is given in methods of examination, the progress of individual cases is followed, and instruction is given in methods of treatment.

III. Clinics. At 12 o'clock on Wednesday the students attend the general clinic in the amphitheatre.

IV. Recitations. On Thursdays at 11 a. m. Dr. Osler holds a recitation.

For the statements as to the courses of instruction in Diseases of Children and in Diseases of the Nervous System, see pp. 41 and 42.

SURGERY

The instruction in Surgery is in charge of Dr. William S. Halsted, Professor of Surgery, assisted by Dr. J. M. T. Finney, Associate in Surgery, Dr. Joseph C. Bloodgood, Instructor in Surgery, Dr. Sydney M. Cone, Assistant in Surgical Pathology, and an Assistant in Genito-Urinary Diseases.

The teaching is in the Dispensary, in the Wards and Operating Rooms of the Hospital, and in the Clinical Laboratory.

The principal work of the third year is in surgical pathology, surgical diagnosis, and the general principles of surgery. It includes:

I. Surgical Pathology. Dr. Cone conducts a course in Surgical Pathology in the class room of the Clinical Laboratory assigned to third-year students. The gross and microscopical appearances of the different stages of repair of wounds under various conditions are studied. Pathological material from the operating rooms is regularly assigned to students for examination. Practice is afforded in the macroscopical and microscopical diagnosis of tumors and in surgical bacteriology.

II. Minor Surgery is taught by Dr. Finney in the Dispensary, where the student gains practical experience in diagnosis, in the application of surgical dressings and apparatus and, in general, in the treatment of surgical cases.

III. Operative Surgery is taught by Dr. Halsted and an Assistant by means of practical exercises.

IV. Clinics. The students attend a weekly clinic conducted by Dr. Halsted.

V. Weekly recitations are held by Dr. Halsted.

The work of the fourth year consists of:

I. Ward Work. Each of the four groups, into which the students of the fourth year are divided, serves for two months in the surgical wards of the Hospital. During this service they take the history of cases and act as surgical dressers. They witness and assist at operations and have practice in operative surgery. This ward work occupies the mornings until twelve o'clock.

II. Ward Classes. The students make the morning visits to the wards with Dr. Halsted or Dr. Bloodgood, where they receive bedside instruction. They thus have daily opportunities to become familiar with the diagnosis, management and progress of surgical cases.

III. Clinics. A weekly clinic, occupying two to three hours, is held by Drs. Halsted and Finney. Dr. Halsted occupies the first hour in the presentation of cases, which the students are permitted to examine and, in many instances, are expected to report upon. This exercise is directly followed by operations by Dr. Finney.

IV. Private Operating Room. To each group of fourth year students the privileges of the private operating room are extended for two months. Operations take place, as a rule, five days a week in this room.

V. A weekly recitation is held by Dr. Halsted.

The study of surgical pathology and practice in operative surgery are continued in the fourth year.

OBSTETRICS

The instruction in Obstetrics is given in the third and fourth years by Dr. J. Whitridge Williams, Associate Professor of Obstetrics, assisted in the clinical work by Dr. George W. Dobbin, Assistant in Obstetrics, as follows:

In the third year five to seven hours a week are devoted to the teaching of Obstetrics. The time is divided between:

I. Didactic lectures.

II. Laboratory instruction in the anatomy, histology, and pathology of the female generative organs, from an obstetrical point of view, and the pathology of the various diseases of pregnancy, labor, and the puerperal state, as well as the various diseases of bone, which play so important a part in the production of deformed pelves.

III. Demonstrations of the various operative procedures upon the manikin, with practical exercises by the students.

IV. Recitations.

In the fourth year, the greater part of the work is practical.

I. Each of the four groups of students into which the fourth-year class is divided serves for two months in the lying-in wards of the Hospital. Here they attend cases of labor and receive practical clinical instruction.

II. The students are also required to attend, under proper supervision, a definite number of poor women at their own homes.

III. There are weekly meetings of the class for clinical conference, in which cases which have been observed by the students are discussed and criticised and practical lessons drawn from them. At the same time recitations are held, which are accompanied by illustrative demonstrations by the students upon the manikin and with the microscope.

IV. In the early part of the year, there is a short course of lectures upon Teratology.

GYNECOLOGY

The instruction in Gynecology is under the charge of Dr. Howard A. Kelly, Professor of Gynecology, aided by Dr. W. W. Russell, Associate in Gynecology, and Dr. Thomas S. Cullen, Instructor in Gynecology and Resident Gynecologist, Johns Hopkins Hospital.

The instruction is given in the fourth year of the course, and consists of:

I. Demonstrations in Gynecological Pathology.
II. A Touch Course.
III. Ward Work.
IV. Work in the Gynecological Dispensary.
V. Gynecological Operations.
VI. Systematic Lectures upon the Principles of Gynecology.
VII. Recitations.

The lectures and recitations are attended by the entire class; the other courses for two months by each of the four sections into which the class is divided.

Dr. Cullen conducts the Demonstrations in Gynecological Pathology from fresh material furnished by the operating room, and from the large number of morbid specimens preserved in the special gynecological collection. The various morbid gynecological conditions are reviewed in this way. Special attention is given to diagnoses from uterine scrapings and small portions of excised tissues.

Dr. Russell conducts the touch course in Gynecology. Each group of students spends two months in the gynecological dispensary, where they are assigned cases for diagnosis.

Once a week examinations are made under ether, and suitable patients are then referred to the Hospital ward for treatment or operation; these cases are followed throughout by the students.

In the wards the students assist the resident gynecologist in taking histories, in caring for the patients, in studying pre- and post-operative complications, in renewing the dressings, etc., in this way following each case in its entire evolution through diagnosis, operation, treatment and final result.

Operations are performed four days every week by Dr. Kelly and Dr. Russell, including all the important gynecological conditions both major and minor.

The field is peculiarly rich in abdominal surgery; particular attention is paid to plastic surgery.

Lectures upon Gynecology are given by Dr. Kelly and by the associate and the assistant; these lectures are both systematic and devoted to special topics of present importance.

Recitations are conducted from time to time to test the advancement of the student and to aid in securing uniformity in the average standing of the class.

SPECIAL DEPARTMENTS OF PRACTICAL MEDICINE AND SURGERY

Instruction in these various special departments is given partly in the third, but mainly in the fourth year. For the Ward and Dispensary work the fourth-year class is divided into four sections so arranged that each section in the course of the academic year has in rotation two months of daily service in the wards of each of the four main divisions, Medical, Surgical, Obstetrical, and Gynecological, of the Hospital, and also two months of daily dispensary work in each of the special departments, viz: Dermatology, Diseases of Children, Diseases of the Nervous System, Genito-Urinary Diseases, Gynecology, Laryngology and Rhinology, and Ophthalmology and Otology.

The students perform their work in the Hospital wards in the morning, in General Medicine and Obstetrics from 8.30 to 10.30, and in General Surgery and Gynecology from 9 to 12. The

Dispensary classes are in the morning from 10.30 to 12 and in the afternoon from 2 to 3.30.

At 12 and at 3.30 the entire class attends a daily clinic, lecture, or recitation in Medicine, Surgery, Obstetrics, or one of the special branches.

DERMATOLOGY

The instruction in this department is in charge of Dr. J. Williams Lord and Dr. T. Caspar Gilchrist, Associates in Dermatology, and consists of:

I. Weekly systematic Lectures and Demonstrations of Cases, combined with Recitations, for the whole class throughout the fourth year. Cutaneous pathology, based upon the description and study of microscopical specimens, is an important feature of the course.

II. Daily work in the Dispensary for two months for each section of students in the fourth year. Here the students, under proper supervision, gain practical experience in the personal examination, diagnosis and treatment of cutaneous diseases.

In this, as in other departments, opportunities are afforded to those who have the time and requisite training for more extended scientific and practical study.

DISEASES OF CHILDREN

Instruction is given by Dr. William D. Booker, Clinical Professor of Diseases of Children, and consists of:

I. A weekly Clinic, Lecture or Recitation for the entire fourth year class. Special attention is given to nursery hygiene; infant-feeding; digestive disorders of infants; growth and development, and physiological and anatomical peculiarities of infancy and childhood; manifestations of diseases as peculiar to children.

II. Daily work in the Dispensary for two months for each section. Students are required to act as clinical clerks, and to discuss the diagnosis and treatment of patients assigned to them. Cases of special interest are presented to all the students of the section for examination.

III. Work in the Clinical Laboratory for Diseases of Children, such as: microscopical examination of the fæces of infants, of ulcerations and patches in the mouth of children, and of sections of anatomical lesions in some of the more important diseases of childhood.

DISEASES OF THE NERVOUS SYSTEM

The instruction under the charge of Dr. Henry M. Thomas, Clinical Professor of Diseases of the Nervous System, is designed to be as practical as possible. The students, having already had in previous years thorough courses in the anatomy, physiology, and pathology of the nervous system, are now taught the application of these subjects to the diagnosis and treatment of disease.

The work consists of:

I. Practical work in the dispensary. Each section works in the neurological dispensary daily for two months. Here the students are taught to take careful histories of the patients, and to make thorough and systematic examinations into the condition of the nervous system. They are encouraged to work as independently as possible, and are expected themselves to make the practical application of the methods which they have been taught. The treatment of each patient is discussed with the instructor, and each student is given opportunity to learn the methods of applying electricity in the diagnosis and treatment of the different forms of nervous disease.

II. Weekly recitation and clinic. On one day in each week the class is brought together for an hour, during which cases are shown, recitations are held, and informal talks are given. The students are referred to standard text books and other literature, and are questioned on given subjects, and, as far as practicable, cases are used to illustrate the conferences.

GENITO-URINARY DISEASES

This department is in charge of the Professor of Surgery and an Assistant. The opportunities and the methods of instruction are similar to those in the other special departments, and consist of:

I. Weekly Lectures, Clinics, or Recitations attended by the entire class during the fourth year.

II. Daily work in the Genito-Urinary Department of the Dispensary during two months for each section of the fourth-year class. Here the student engages in practical work as a clinical assistant and receives instruction in the pathology, diagnosis and treatment of venereal and other genito-urinary diseases.

LARYNGOLOGY AND RHINOLOGY

The instruction in this department is in charge of Dr. John N. Mackenzie, Clinical Professor of Laryngology and Rhinology.

I. Weekly Lectures, Clinics and Recitations. Throughout the fourth year there is a systematic course of weekly lectures, supplemented by pathological and clinical demonstrations, on the anatomy, the physiology and the common diseases of the upper air tract (nasal and accessory cavities, pharynx, larynx and trachea) and their relations to morbid processes in neighboring and remote parts of the body. In this course special attention is paid to those affections of the air passages which are of most importance to the general practitioner. In connection with these lectures, recitations are held. This course is attended by the entire fourth year class.

II. Daily work in the Dispensary. Each section of the fourth year class attends for one hour and a half daily during two months the Laryngological and Rhinological Department of the Dispensary where practical instruction is given by Dr. Mackenzie and his assistants. After preliminary drilling in the use of the laryngoscope and other technical procedures and in diagnosis, the student assumes the work of clinical assistant. Pathological material is furnished for microscopic examination and diagnosis.

OPHTHALMOLOGY AND OTOLOGY

The instruction in this department is conducted by Dr. Samuel Theobald, Clinical Professor of Ophthalmology and Otology, and Dr. Robert L. Randolph, Associate in Ophthalmology and Otology.

I. A weekly Lecture or Recitation is given by Dr. Theobald throughout the academic year. These lectures are of a practical character and include a consideration of the surgical anatomy of the eye and ear, the physiology of vision and of hearing, the various methods of examining the eye and the ear, and the more important diseases of these organs.

II. A daily Clinic is given in the Dispensary by Dr. Theobald or Dr. Randolph. Each group of students attends the ophthalmological and otological department of the Dispensary daily for two months. The students here are permitted to assist in operations, to examine cases for diagnosis, and to familiarize themselves with the use of the ophthalmoscope, the methods of testing errors of refraction, etc. The small number of students comprising the separate groups makes especially valuable the opportunities thus afforded of acquiring a practical knowledge of the diseases of the eye and ear.

PSYCHIATRY

Instruction in Diseases of the Mind is given by Dr. Henry M. Hurd, Professor of Psychiatry, and Dr. Henry J. Berkley, Associate in Neuro-Pathology. It consists of:—

I. Weekly lectures, recitations, or pathological demonstrations by Dr. Hurd or Dr. Berkley, from October until the Easter vacation.

II. Visits to the wards of the large City Asylum at Bay View with Dr. Berkley to study the various forms of mental disease, and to attend the clinical lectures and demonstrations of Dr. Berkley.

HYGIENE

Instruction in Hygiene is included in the courses in Pathology and Bacteriology and in Physiological and Hygienic Chemistry. A course of lectures and recitations on Foods in Health and Disease is given by Dr. Abel. In addition, a short course of lectures on special topics in Hygiene is given by a special lecturer, appointed for the purpose, in the course of the third year.

MEDICAL ZOOLOGY

Instruction in Medical Zoology is given to students of the fourth year by Dr. Charles W. Stiles, Lecturer on Medical Zoology, and Zoologist to the U. S. Bureau of Animal Industry. It consists of a course of ten lectures on the animal parasites of man, illustrated with numerous charts and specimens, and supplemented by practical laboratory exercises in examining meat for trichinosis and in the diagnosis of zoo-parasitic diseases by microscopic examination of faeces. The parasites are studied from the standpoints of zoology, practical medicine, and public hygiene.

LEGAL MEDICINE

This subject receives attention in the courses in Pathological Anatomy, Toxicology, Psychiatry and other departments. Arrangements are contemplated also for more special instruction in medical jurisprudence.

HISTORY AND LITERATURE OF MEDICINE

Lectures upon this subject are given by Dr. John S. Billings, Lecturer on the History and Literature of Medicine.

SPECIAL LECTURES

From time to time, as opportunity offers, short courses of lectures or demonstrations upon selected topics are given either by specially appointed lecturers or by members of the teaching staff.

PROGRAMME OF COURSES

For convenience of reference the programme of the studies in each of the four years is here given. The general character and details of these courses of instruction have been described in the foregoing pages. The right to change or amend the courses of study, if deemed desirable, is reserved. Schedules of the hours and other details of the exercises are furnished to the students at the beginning of each annual session.

FIRST YEAR

Anatomy.
  Recitations.
  Dissections, 2 to 5 p. m., five days a week (also during other available hours).

Normal Histology and Microscopic Anatomy. October 1 to March 15.
  Lectures with Demonstrations, 9 to 10 a. m., three a week.
  Laboratory Work, 10 to 1, three days a week. (After March 15 there is opportunity for advanced work and review.)
  Special Course in Microscopic Technique.

Physiology. January 1 to June 15.
  Lectures, Demonstrations and Recitations, 11 a. m. to 1 p. m., twice weekly until March 15; five days a week after March 15.

Physiological Chemistry.
  Introductory Lectures. October 1 to January 1, two a week.
  Laboratory Work. March 15 to June 15, 2 to 5 p. m., five days a week.

Examinations in Normal Histology, Microscopic Anatomy, and Physiological Chemistry are held at the end of the first year.

SECOND YEAR

Anatomy.

Dissections, 9 to 12, when not engaged in the Physiological Laboratory (also during other available hours).

Physiology. October 1 to January 1.

Laboratory Work in sections, 9 to 12, twice a week.

Lectures, 12 to 1, three a week.

Bacteriology. October 1 to January 1.

Recitations, one a week.

Lectures on Infection and Immunity, two a week.

Laboratory Work, 2 to 5, three days a week.

Pathology (including Post-Mortem Examinations, General Pathology, Pathological Anatomy and Histology, and Pathological Demonstrations). January 1 to June 15.

Recitations, one a week.

Lectures, one or two a week.

Laboratory Work, 2 to 5, three days a week.

Post-Mortem Examinations and Demonstrations, two or more a week.

Pharmacology and Toxicology. January 1 to June 15.

Recitations.

Laboratory Work, 2 to 5, three days a week.

Hygienic Chemistry.

Lectures with Demonstrations, one a week, for two months.

Examinations in Anatomy, Physiology, Bacteriology, Pathology, Pharmacology and Toxicology are held at the end of the second year.

THIRD YEAR

General Medicine.

Demonstrations in Medical Anatomy, introductory to the following:

Physical Diagnosis, three times a week.

Dispensary Work with Clinical Instruction, two days a week.

Clinics in the Hospital Amphitheatre, once a week.

Recitations, once a week.

Clinical Microscopy.
  Laboratory Work, 3 to 5, three days a week.

Surgery.
  Dispensary Work with Clinical Instruction, three days a week.
  Clinics in the Hospital Amphitheatre, once a week.
  Recitations, once a week.
  Laboratory Work in Surgical Pathology, 3 to 5, twice a week.
  Practical course in Operative Surgery.

Obstetrics.
  Recitations, Lectures, or Demonstrations, three times a week.
  Laboratory and Manikin Exercises, two hours, twice a week.

Diseases of the Nervous System.
  Dispensary, 10.30 to 12, daily. Two months for each section.
  Lecture, Clinic or Recitation, once a week.

Dietetics. November 1 to January 1.
  Lectures on Food and Diet, once a week.

Hygiene.
  Lectures and Demonstrations on Special Topics, once a week for two months.

History of Medicine.
  Lectures (attended by all students).

Examinations upon the work of the year.

FOURTH YEAR

For the work in the Hospital Wards and the Dispensary the fourth-year class is divided into four sections, each section serving two months as Clinical Clerks or Surgical Dressers in the Medical, Surgical, Gynecological, and Obstetrical Wards of the Hospital, and also two months in each of the special departments of the Dispensary, viz., the Dermatological, Genito-Urinary, Gynecological, Laryngological and Rhinological, Ophthalmological and Otological, and Pediatric.

Medicine.
  Hospital Wards. (Ward Work and Ward Classes.) 8.30 to 10.30 a. m., daily. Two months service for each section.

Clinics or Lectures, once a week.
Recitations, once a week.

Surgery.
Hospital Wards and Operating Room. (Ward Work and Ward Classes.) 9 to 12, daily. Two months service for each section.
Clinics, two a week.
Recitations, once a week.
Operative Surgery.

Obstetrics.
Hospital Wards, 8.30 to 10.30 a. m., daily. Two months service for each section.
Out-Patient Obstetrical Service. Two months for each section.
Recitations, once a week.

Gynecology.
Hospital Wards, 9 to 12, daily. Two months service for each section.
Dispensary, 2 to 3.30, daily. Two months for each section.
Touch Course.
Clinics, once a week.
Lectures.
Recitations, once a week.
Laboratory Work and Demonstrations in Gynecological Pathology.

Dermatology.
Dispensary, 2 to 3.30, daily. Two months for each section.
Lectures, Clinics or Recitations, once a week.

Diseases of Children.
Dispensary, 10.30 to 12, daily. Two months for each section.
Lectures, Clinics or Recitations, once a week.

Genito-Urinary Diseases.
Dispensary, 10.30 to 12, daily. Two months for each section.
Lectures, Clinics or Recitations, once a week.

Laryngology and Rhinology.
Dispensary, 2 to 3.30, daily. Two months for each section.
Lectures, Clinics or Recitations, once a week.

Ophthalmology and Otology.

Dispensary, 2 to 3.30, daily. Two months for each section.
Lectures, Clinics or Recitations, once a week.

Psychiatry.

Lectures, weekly from October 1.
Clinics at Bay View, once a week.

Medical Zoölogy.

Ten lectures with Demonstrations and Laboratory Work on Animal Parasites in February, March and April.

Examinations in Medicine, Surgery, Obstetrics, Gynecology and the various Special Departments above enumerated are held at the end of the fourth year.

ANNUAL EXAMINATIONS

At the end of the first year examinations in physiological chemistry, normal histology, and microscopic anatomy are held.

At the end of the second year examinations in anatomy, physiology, pathology, bacteriology, pharmacology and toxicology are held.

At the end of the third year examinations in medicine, surgery, and obstetrics, as far as these subjects have been pursued, are held.

At the end of the fourth year are the final examinations in medicine, surgery, obstetrics, gynecology, and the special branches in which instruction has been provided during this year.

The examinations are partly written and partly oral, and include practical tests of laboratory and clinical work.

Each student must have done satisfactory work in all the subjects and must pass the examinations at the end of each year, before he can be admitted to the courses of the succeeding year.

Conditions must be absolved at the beginning of the session in October.

The estimation of the standing of each student is based both upon the general character of his work and upon the results of examinations.

HOSPITAL APPOINTMENTS

At the close of the academic year in June twelve members of the graduating class are selected for appointment as house officers in the Johns Hopkins Hospital to serve for one year from September first. The appointments are made upon the basis of the general standing of the students in all of the subjects of study during the entire four years' course, combined with considerations of personal fitness. These appointees reside in the Hospital and become officers upon the house staff. They serve in rotation in the Medical, Surgical and Gynecological Divisions of the Hospital with one month's service in the Obstetrical wards. In addition the Faculty is entitled to nominate annually two physicians as assistants upon the house staff of the City Asylum at Bay View.

The appointments of the resident physician, surgeon, gynecologist and obstetrician of the Johns Hopkins Hospital are permanent ones. The first and second resident assistantships under these are annual appointments, subject to renewal.

REQUIREMENTS FOR GRADUATION

The degree of Doctor of Medicine is conferred upon those who, after fulfilling all the requirements for admission, have completed satisfactorily the four years course of study in this Medical School.

In every instance all of the requirements for admission must be fulfilled and a four years course of medical study, equivalent in its standards to that given here, must be completed, of which the final year must be spent in this Medical School.

The degrees are publicly conferred by the Johns Hopkins University at the closing exercises in June.

CHARGES FOR TUITION

The charge for tuition is two hundred dollars per annum, payable at the Treasurer's office, in semi-annual instalments, October 1 and February 1. There are no extra charges for matriculation or for graduation or for instruction in any department or for laboratory courses, except for materials consumed. For those who do not possess microscopes, there is an annual charge of five dollars for the use of a microscope. The student is responsible for damage to the microscope thus rented. A deposit of ten dollars as caution money is required from each student at the time of his enrolment. The caution money is repaid to the student when he leaves, if there are no charges against him. Special charges are made for breakage and for damage to apparatus.

APPENDIX

I

ENDOWMENT

The founder of the Johns Hopkins University, in devoting his large fortune to the establishment of the university and the hospital, had in view the organization of a school of medicine. In his letter addressed to the Trustees of the hospital, dated March 10th, 1873, these significant words occur:

"It will be your especial duty to secure, for the service of the hospital, surgeons and physicians of the highest character and greatest skill. . . . In all your arrangements in relation to this hospital, you will bear constantly in mind that it is my wish and purpose that the institution shall ultimately form a part of the Medical School of the University for which I have made ample provision in my will."

When the University was opened in 1876, arrangements were made for instruction in those sciences, such as physics, chemistry, and biology, which lead up naturally to the professional study of medicine. In 1884 the professorship of pathology was filled and the pathological laboratory was opened. In 1889 the Johns Hopkins Hospital was opened, and the physician, surgeon, and gynecologist in chief to the hospital were appointed to the professorships respectively of medicine, surgery, and gynecology and obstetrics. At the same time the professor of psychiatry was appointed. Opportunities for instruction were afforded to graduates in medicine. Ampler endowment, however, was needed to complete the organization of a medical department.

Gifts amounting to $111,731.68, most of which were offered to this University in October, 1890, by a committee of women, and an additional gift of $306,977, offered to the University in December, 1892, in addition to her previous subscriptions, by Miss Mary Elizabeth Garrett, made up, with other available resources, the amount of $500,000, which had been agreed upon by the Trustees as the minimum endowment of the Medical Department. These generous contributions were made upon condition that women be received upon the same terms as men. This endowment, together with other available resources of the Johns Hopkins University and the Johns Hopkins Hospital, enabled the Trustees to complete the organization of the Medical Department and to open it for instruction in 1893.

II

THE MARY ELIZABETH GARRETT FUND*

TERMS OF THE GIFT, AS ACCEPTED BY THE TRUSTEES, FEBRUARY 21, 1893.

Miss Mary Elizabeth Garrett, in order to make up the sum of $500,000, which the Board of Trustees required should be secured as an endowment before the Medical School of the University was opened, has contributed to that fund the sum of $306,977 upon the following terms, which have been agreed to by the University:

1. That women shall enjoy all the advantages of the Medical School of the Johns Hopkins University on the same terms as men, and shall be admitted on the same terms as men to all prizes, dignities or honors that are awarded by competition, examination or regarded as rewards of merit.

2. That not more than $50,000 of the original endowment of $500,000 shall be expended on a building or buildings; and that in memory of the contributions of the Committees of the Women's Medical School Fund, this building, if there be but one, or the chief building, if there be more than one, shall be known as the Women's Fund Memorial Building.

3. That the Medical School of the University shall be exclusively a graduate school as hereinafter explained, that is to say: That the Medical School of the Johns Hopkins University shall form an integral part of the Johns Hopkins University, and like other departments of the University, shall be under the management and control of the Trustees of the said University; that it shall provide a four years' course, leading to the degree of Doctor of Medicine; that there shall be admitted to the School those students only who by examination or by other tests equally satisfactory to the Faculty of the Medical School (no distinction being made in these tests or examinations between men and women), have proved that they have completed the studies included in the Preliminary Medical Course (Group Three, Chemical-Biological Course) as laid down in the University Register (but this condition is not meant to restrict the Trustees from receiving as hearers, but not as candidates for the degree of Doctor of Medicine, those who have received the degree of Doctor of Medicine, or its equivalent, in some school of good repute); and that the degree of Doctor of Medicine of the Johns Hopkins University shall be given to no Doctors of Medicine who have not proved by examination or by other tests equally satisfactory to the Faculty of the Medical School that they have completed the studies included in the Preliminary Course, besides completing the course of instruction of the Medical School of the Johns Hopkins University.

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*So designated by the Trustees, December 24, 1892.

The aforegoing provisions shall not be construed as restricting the liberty of the University to make such changes in the requirements for the admission to the Medical School of the Johns Hopkins University or to accept such equivalents for the studies required for admission to this school as shall not lower the standard of admission specified in this clause: provided that the requirements in modern languages other than English shall not be diminished, and provided also that the requirements in non-medical scientific studies shall include at least as much knowledge of natural science as is imparted in the three minor courses in science now laid down in its university register, the subjects and arrangements of these scientific studies being subject to such modifications as may from time to time seem wise to its Board and to the Faculty of the Medical School, but being at all times the same for all candidates for admission. (For such requirements always see University Register.)

4. That the terms of this gift and the Resolutions of October 28th, 1890, by which the Trustees accepted the gift of the Woman's Medical School Fund, shall be printed each year in whatever annual calendars may be issued announcing the courses of the Medical School.—See appended Resolutions.

5. That there shall be created a committee of six women to whom the women studying in the Medical School may apply for advice concerning lodging and other practical matters, and that all questions concerning the personal character of women applying for admission to the School, and all non-academic questions of discipline affecting the women studying in the Medical School shall be referred to this committee, and by them be in writing reported for action to the authorities of the University; that the members of this committee shall be members for life; that the committee, when once formed, shall be self-nominating, its nominations of new members to fill such vacancies as may occur being subject always to the approval of the Board of Trustees of the University.

6. That in the event of any violation of any or all of the aforesaid stipulations, the said sum of $306,977 shall revert to her, or such person or persons, institution or institutions, as she by testament or otherwise may hereafter appoint.

It will be observed that by the tenor of the aforegoing terms no university course will be in any way modified by any conditions attached to her gift. Those conditions relate exclusively to preparation for the Medical School, and have received, in the shape in which they are now presented, the unanimous approval of the Medical Faculty of the University.

The terms of admission to the Medical School of the University as formulated and interpreted by the Medical Faculty of the University, February 4, 1893, and here subjoined, are therefore in entire accordance with the terms of her gift.

(Signed) MARY E. GARRETT.

REQUIREMENTS FOR ADMISSION TO THE MEDICAL SCHOOL OF THE JOHNS HOPKINS UNIVERSITY, UNANIMOUSLY APPROVED BY THE MEDICAL FACULTY, FEBRUARY 4, 1893.

A course of four years' instruction will be provided leading to the degree of Doctor of Medicine.

To this course there will be admitted as candidates for the degree:

1. Those who have satisfactorily completed the Chemical-Biological Course which leads to the A. B. Degree in this University.

2. Graduates of approved Colleges or Scientific Schools who can furnish evidence: (*a*) That they have a good reading knowledge of French and German; (*b*) That they have such knowledge of Physics, Chemistry and Biology as is imparted by the regular Minor Courses given in these subjects in this University.

3. Those who give evidence by examination that they possess the general education implied by a degree in arts or in science from an approved College or Scientific School, and the knowledge of French, German, Physics, Chemistry and Biology, already indicated.

By approved Colleges and Scientific Schools are meant those whose standard for graduation shall be considered by this University as essentially equivalent to its standard for graduation in the undergraduate department.

It is to be understood that at least one year's study in the Chemical and Biological Sciences in their immediate relations to medicine shall be required from students after their entrance to the medical school.

III

THE WOMEN'S MEDICAL SCHOOL FUND

At a meeting of the Board of Trustees of the University, October 28, 1890, the following letter was presented:

"The committees formed for the purpose of raising a fund to procure the most advanced medical education for women, can now place at your disposal the sum of one hundred thousand dollars for the use of your medical school, if you will, by resolution, agree that women whose previous training has been equivalent to your preliminary medical course, shall be admitted to the school, when it shall open, upon the same terms which may be prescribed for men. There can be no doubt that women ought to be trained to act as nurses for sick women. There is as little doubt that a sufficient number of women ought to be educated and trained in such manner as to be fully able to care for sick women who may wish or ought to be treated by women. We have devoted ourselves to the furtherance of this object.

We have reason to hope that a university which proposes to found a medical school intended to teach advanced methods in the treatment of those diseases which afflict mankind, will not refuse to women the opportunity of learning such methods. There is now a general interest in our movement. In order that this interest may be sustained we ask you to consider our offer at the earliest possible period.

NANCY MORRIS DAVIS,
Chairman of the Baltimore Committee."

The following minute was adopted by the Trustees:

The President and Board of Trustees of the Johns Hopkins University have received from Mrs. Nancy Morris Davis, chairman of one of the committees formed for the purpose of raising a fund to procure the most advanced medical education for women, the gratifying intelligence that $100,000 has been raised for the use of their intended Medical School, and is at their disposal, if they will, by resolution, agree to the terms upon which the money was contributed by its donors.

These terms are that this Board, if it accepts the funds thus raised, shall agree, by resolution, that, when its Medical School shall be opened, women whose training has been equivalent to the preliminary medical course prescribed for men, shall be admitted to such school upon the same terms as may be prescribed for men.

The offer to this University of the particular fund is the free voluntary act of women residing in this State and in other states, made without the suggestion or solicitation of this Board, and we accept it under and subject to the terms which are made a part of the gift, with the understanding and declaration, however, that such preliminary training in all its parts shall be obtained in some other institution of learning devoted, in whole or in part, to the education of women, or by private tuition.

The fund so contributed shall be invested and known as "The Women's Medical School Fund," and that fund, and all interest to accrue thereon, and all additions made thereto for the same purpose, shall remain invested for the purposes of increase only until, with its aid as a foundation, a general fund has been accumulated amounting to not less than $500,000, and sufficient for the establishment and maintenance of a Medical School worthy of the reputation of this University and fully sufficient as a means of complete medical instruction. Then, and not until then, will a Medical School be opened by this University; and then, and not until then, will the gift now offered be used by this University; and then, and not until then, will the terms attached thereto be operative.

The utility of a training school for women nurses has been demonstrated by the experience and practice of the Johns Hopkins Hospital, and by the necessities of home life among our people.

This Board is satisfied that in hospital practice among women, in penal institutions in which women are prisoners, in charitable institutions in which women are cared for, and in private life, when women are to be attended, there is a need and place for learned and capable women physicians; and that it is the business and duty of this Board, when it is supplied with the necessary means for opening its proposed Medical School, to make provision for the training and full qualification of such women for the abundant work which awaits them in these wide fields of usefulness.

Nothing contained in this minute shall be construed as abridging, in any manner, the right of the Board of Trustees of the Johns Hopkins University to make such rules and regulations as they may deem necessary for the government of its School of Medicine, when it is organized; and in making such rules and regulations, the terms of this minute shall always be respected and observed.

WOMEN'S COMMITTEE OF THE MEDICAL SCHOOL, APPOINTED BY MISS GARRETT, DECEMBER 22, 1892.

MRS. HENRY M. HURD,
MRS. IRA REMSEN,
MRS. WILLIAM OSLER,
MISS M. CAREY THOMAS,
MISS MARY M. GWINN,
MISS MARY E. GARRETT.

Their duties are stated in paragraph 5 of the letter printed above.

PART II

CATALOGUE AND ANNOUNCEMENT OF THE SPECIAL COURSES OF INSTRUCTION FOR GRADUATES IN MEDICINE

PHYSICIANS ATTENDING SPECIAL COURSES

1895-96

Louis F. Alvarez M. D., Cooper Medical College, 1887.	Oviedo, Spain	*Pathology and Bacteriology*
Michael T. Arslanides M. D., University of Minnesota, 1893.	Cæsarea, Asia Minor	*Med., Surg., Gynecol., and Bacteriol.*
A. Duval Atkinson M. D., University of Maryland, 1894.	Baltimore	*Pathology and Bacteriology*
John S. Bishop M. D., University of Pennsylvania, 1895.	Snow Hill	*Med., Surg., and Gynecol.*
Ethel Blackwell M. D., Woman's Medical College (N. Y.), 1895.	Elizabeth, N. J.	*Med. and Special Research*
E. Bates Block M. D., University of Virginia, 1895.	Atlanta, Ga.	*Med., Surg., Gynecol., Pathol., and Bacteriol.*
Louis Brechemin M. D., University of Pennsylvania, 1876; Surgeon, U. S. Army.	Philadelphia, Pa.	*Pathology*
George S. Brown M. D., Jefferson Medical Coll., 1885.	Birmingham, Ala.	*Med., Surg., Gynecol., Pathol., and Bacteriol.*
Madison O. Burke M. D., Tulane University, 1891.	Honaker, Va.	*Med., Surg., and Gynecol.*
George Carruthers M. D., McGill University, 1883.	Alberton, P. E. I.	*Med., Surg., Gynecol., Pathol., and Bacteriol.*
Stuart Cassard M. D., Baltimore Medical College, 1895.	Baltimore	*Medicine and Pathology*
Goode Cheatham M. D., North Carolina Medical College, 1895.	Davidson, N. C.	*Med., Surg., and Gynecol.*
Claribel Cone M. D., Woman's Medical College (Balt.), 1890.	Baltimore	*Special Research*
Chandos B. Conner M. D., College of Physicians and Surgeons (Balt.), 1895.	Brockton, Mass.	*Med., Surg., and Gynecol.*
Edgar P. Cook, Jr. Ph. B., Northwestern University, 1892, and M. D., 1895.	Mendota, Ill.	*Med., Surg., Gynecol., Pathol., and Bacteriol.*
Isabella Cowan M. D., Woman's Medical College (N. Y.), 1895.	Waterbury, Conn.	*Med., Surg., Gynecol., and Pathol.*
Martin J. Cromwell M. D., University of Maryland, 1894.	Baltimore	*Pathology and Bacteriology*
William H. Crothers M. D., Cooper Med. Coll., 1895.	San Jose, Cal.	*Med., Surg., Gynecol., Pathol., and Bacteriol.*

William S. Davidson M. D., University of Maryland, 1887.	Hopewell, N. C.	*Medicine*
Cornelius Deweese M. D., Jefferson Medical College, 1895.	Denton	*Med., Pathology, and Bacteriology*
Isaac B. Diamond M. D., Southern Medical College (Ga.), 1894.	Baltimore	*Bacteriology and Pathology*
Jay H. Durkee M. D., College of Physicians and Surgeons (N. Y.), 1896.	Jacksonville, Fla.	*Pathology and Bacteriol.*
Louise Eaton M. D., Woman's Medical College (Balt.), 1894.	Baltimore	*Medicine and Pathology*
Guy L. Edie M. D., University of Virginia, 1879; Surgeon, U. S. Army.	Washington, D. C.	*Pathology and Bacteriology*
Frank H. Finley M. D., College of Physicians and Surgeons (Balt.), 1895.	Finleyville, Pa.	*Pathology and Bacteriology*
Tom Firebaugh M. D., University of Virginia, 1895.	Harrisonburg, Va.	*Medicine*
Joseph F. Fox M. D., University of Wooster, 1887.	New Philadelphia, O.	*Med., Surg., and Gynecol.*
Almah J. Frisby M. D., Boston University, 1883.	Milwaukee, Wis.	*Pathology and Bacteriology*
Walter W. Fullerton M. D., Physicians and Surgeons (Balt.), 1895.	Brockton, Mass.	*Med., Surg., Gynecol., and Pathol.*
T. Perceval Gerson M. D., University of Pennsylvania, 1895.	Lansdowne, Pa.	*Pathology and Bacteriology*
John L. Gilbert M. D., Kansas Medical College, 1892.	Topeka, Kan.	*Special Research*
John W. Givens M. D., Bellevue Hospital Medical College, 1883.	Blackfoot, Idaho	*Med., Surg., Gynecol., Pathol., and Bacteriol.*
Nathan R. Gorter M. D., University of Maryland, 1879.	Baltimore	*Pathology and Bacteriology*
George L. Greenawalt M. D., Bellevue Hospital Medical College, 1880.	Fort Wayne, Ind.	*Special Research*
Mary E. Hennessy M. D., Woman's Medical College (Phila.), 1885.	New York City	*Bacteriology*
Jose L. Hirsh M. D., University of Maryland, 1895.	Baltimore	*Med., Surg., Gynecol., and Pathol.*
John U. Hobach M. D., University of Pennsylvania, 1884.	Baltimore	*Bacteriology*
Michael Hoke M. D., University of Virginia, 1895.	Raleigh, N. C.	*Med., Surg., Gynecol., Pathol., and Bacteriol.*
Harry Hurtt M. D., University of Maryland, 1895.	Locust Grove	*Med., Bacteriol., and Pathol.*
William B. Irish M. D., Jefferson Medical College, 1894.	Pittsburg, Pa.	*Pathology and Bacteriology*
Mary J. Kearsley M. D., Woman's Med. Coll. (Chicago), 1888.	Chicago, Ill.	*Med., Surg., Gynecol., and Pathol.*

Ira D. Knotts M. D., University of Pennsylvania, 1887.	Davistown, Pa.	*Medicine*
Harriet L. Knox M. D., Woman's Medical Coll. (N. Y.), 1894.	Brooklyn, N. Y.	*Med., Surg., Gynecol., Pathol., and Bacteriol.*
William S. Langfitt M. D., Western Pa. Medical College, 1894.	Allegheny, Pa.	*Gynecology*
Auguste L. J. Lartigau M. D., University of California, 1895.	San Francisco, Cal.	*Med., Surg., Gynecol., Pathol., and Bacteriol.*
Caroline C. Lawrence M. D., Woman's Med. Coll. (Phila.), 1894.	Asheville, N. C.	*Med., Surg., Gynecol., Bacteriol., and Pathol.*
John L. Lewis M. D., University of Maryland, 1888.	Kensington	*Gynecology*
William H. Merrill M. D., Bowdoin Medical College, 1888.	Newport, Me.	*Medicine*
Edward Milholland, Jr. M. D., University of Maryland, 1895.	Baltimore.	*Pathology*
Mabel W. Moore M. D., Woman's Medical College (Phila.), 1889.	Baltimore	*Medicine, Surgery, and Gynecology*
John C. Morfit M. D., College of Physicians and Surgeons (Balt.), 1895.	Baltimore	*Pathology*
George P. Peed M. D., University of Virginia, 1895.	Portsmouth, Va.	*Med., Bacteriol., and Pathol.*
Stephen J. Podlewski M. D., Baltimore Medical College, 1895.	Baltimore	*Pathology and Bacteriology*
Charles H. Potter	Cleveland, O.	*Bacteriology and Pathology*
Francis L. Roger M. D., Baltimore Medical College, 1895	Baltimore	*Medicine, Surgery, and Gynecology*
Kate Sanborn M. D., Boston University, 1883.	Medway, Mass.	*Medicine*
Henry R. Slack M. D., Atlanta Medical College, 1891.	La Grange, Ga.	*Medicine and Pathology*
Peter M. Smith M. D., Georgetown University (D. C.), 1894.	Lancaster, N. H.	*Medicine and Bacteriology*
George N. J. Sommer M. D., University of Pennsylvania, 1894.	Trenton, N. J.	*Special Research and Pathology*
William Edward Swan M. D., College of Physicians and Surgeons (N. Y.), 1890.	Saratoga Springs, N. Y.	*Med., Surg., Gynecol., Bacteriol., and Pathol.*
Benjamin H. Tatum M. D., University of Maryland, 1891.	Snow Creek, Va.	*Surgery*
Thomas K. Terrell M. D., University of Virginia, 1895.	Lynchburg, Va.	*Med., Surg., Gynecol., and Pathol.*
Adelaide M. Underwood M. D., Woman's Medical Coll. (Phila.), 1890.	Lancaster, Pa.	*Med., Surg., Gynecol., and Pathol.*
Emily Clark Upham M. D., Woman's Medical College (Phila.), 1895.	Meriden, Conn.	*Medicine and Bacteriology*

CHARLES A. VEITH **M. D., University of Pennsylvania, 1895.**	Pottsville, Pa.	*Gynecology*
ANNA A. WATSON **M. D., Woman's Medical College (Phila.), 1894.**	New Athens, O.	*Medicine, Surg., and Gynecol.*
WILLIAM T. WATSON **M. D., University of Maryland, 1891.**	Baltimore	*Bacteriology*
LARS T. WENDELBOE **M. D., Baltimore Medical College, 1895.**	Baltimore	*Pathology and Bacteriology*
WILLIAM A. YOUNG **M. D., Ohio Medical College, 1893.**	Newport, Ky.	*Pathology*

(69)

SPECIAL COURSES FOR GRADUATES IN MEDICINE

GENERAL INFORMATION

Since the opening of the Johns Hopkins Hospital in 1889, courses of instruction have been offered to graduates in medicine. The attendance upon these courses has steadily increased with each succeeding year and indicates gratifying appreciation of the special advantages here afforded. With the completed organization of the Medical School, which was opened in 1893, it was found necessary to give the courses intended especially for physicians at a later period of the academic year than that hitherto selected. It is, however, believed that the period now chosen for this purpose is more convenient for the majority of those desiring to take the courses than the former one.

The special courses of instruction for graduates in medicine are now given annually during the months of May and June. During April there is a preliminary course in Normal Histology.

These courses are in Pathology, Bacteriology, Clinical Microscopy, General Medicine, Surgery, Gynecology, Dermatology, Diseases of Children, Diseases of the Nervous System, Genito-Urinary Diseases, Laryngology and Rhinology, and Ophthalmology and Otology. The instruction is intended to meet the requirements of practitioners of medicine, and is almost wholly of a practical character. It includes laboratory courses, demonstrations, bedside teaching, and clinical instruction in the wards, dispensary, amphitheatre, and operating rooms of the Hospital.

These courses are open to those who have taken a medical degree and who give evidence satisfactory to the several instructors that they are prepared to profit by the opportunities here offered. The number of students who can be accommodated in some of the practical courses is necessarily limited. For these the places are assigned according to the date of application.

The clinical instruction is given in the wards of the Johns Hopkins Hospital, in the Dispensary, and in the Operating Rooms and Amphitheatre. These afford an abundance of clinical material.

The Pathological and the Clinical Laboratories are on the grounds of the Hospital, and are well arranged and equipped for their special purposes. The opportunities are thus convenient for combining clinical work with studies in the Pathological, Bacteriological, and Clinical Laboratories.

In the main building of the Hospital is a Medical Library with sets of medical periodicals. The various special laboratories possess also appropriate libraries. These, as well as the libraries of the Peabody Institute and of the Medical and Chirurgical Faculty, are available for the use of medical students. The proximity of Washington permits the ready consultation of books in the Library of the Surgeon General's Office and the examination of the valuable specimens in the Army Medical Museum.

Three associations—the Hospital Medical Society, the Historical Club and the Journal Club—meet in the Assembly Room of the Hospital, one on each Monday evening from October to June.

The Johns Hopkins Hospital Bulletin, issued monthly, and the Johns Hopkins Hospital Reports contain the proceedings of the Hospital Societies, articles by the Hospital staff, and the results of researches conducted in the Hospital and the laboratories.

REGULATIONS REGARDING MICROSCOPES FOR GRADUATE COURSES

Those who take the practical graduate courses requiring the use of a microscope (Pathology, Bacteriology, and Clinical Microscopy) must provide their own microscopes, as the laboratories do not supply microscopes for the graduate courses. The microscopical outfit should include an oil-immersion objective and a sub-stage illuminating apparatus.

STATEMENTS AS TO THE COURSES OF INSTRUCTION FOR GRADUATES IN MEDICINE

1. NORMAL HISTOLOGY

For those who may not be adequately prepared to follow the laboratory courses in Pathology, Bacteriology and Clinical Microscopy, a special preliminary course in Normal Histology is given during the month of April.

2. PATHOLOGY AND BACTERIOLOGY

Instruction in these subjects is under the direction of Dr. William H. Welch, Professor of Pathology, Johns Hopkins University, and Pathologist to the Johns Hopkins Hospital, Dr. Simon Flexner, Associate Professor of Pathology and Resident Pathologist to the Hospital, Dr. Louis E. Livingood, Assistant in Pathology, and of an Assistant in Bacteriology.

The instruction is given in the Pathological and Clinical Laboratories of the Johns Hopkins University and Hospital. The courses are open to physicians, medical students, and advanced students in biology, who have had the requisite training in normal histology.

I. PATHOLOGY.

The course in Pathology for physicians is conducted separately from that for candidates for the degree of Doctor of Medicine. The physicians' course begins on the first of May and continues on three afternoons of the week for two months. This course embraces pathological histology, the demonstration of fresh pathological specimens, and the technique of post-mortem examinations. A useful collection of museum specimens also is employed in demonstrating gross lesions.

The course begins with the study of inflammation and takes up in regular order the pathological histology of the different organs and tissues of the body, including the pathology of tumors. Microscopical sections are given to be stained, mounted, and carefully studied.

Frequent opportunities are afforded to witness the post-mortem examinations made in the autopsy theatre, which is a part of the Pathological Laboratory.

II. BACTERIOLOGY.

The course in bacteriology for physicians, limited to thirty students, begins the first of May and continues for six weeks. The bacteriological course consists in practical work in the bacteriological laboratory, which occupies rooms in the pathological building. The student is taught the preparation of culture media, the principles of disinfection and sterilization, methods of cultivating, staining, and studying bacteria, the biological examination of water, air, and soil, and familiarity with the important bacterial species, particularly those of a pathogenic nature. This department is fully supplied with the requisite apparatus and cultures for bacteriological work.

III. A course of lectures on selected subjects relating to Infection and Immunity is given by Dr. Welch.

IV. ADVANCED AND SPECIAL WORK.

Opportunity is provided for advanced work and special research in Pathological Histology, Experimental Pathology, and Bacteriology for those fitted to undertake it. Special workers are received at any time during the academic year (October to June).

The laboratory is equipped with abundant material for investigations in pathological histology, with the necessary apparatus for work in experimental pathology, and with cultures and facilities for bacteriological research. There is a sufficient supply of fresh material from the wards of the Hospital and from the post-mortem examinations. Special subjects for research will be assigned to those who wish and are prepared to undertake original investigation.

3. CLINICAL MICROSCOPY

This subject, which is under the general supervision of the department of medicine is taught, by Dr. T. B. Futcher, Associate in Medicine, Dr. C. N. B. Camac, Assistant in Medicine, Johns Hopkins Hospital, and assistant demonstrators.

The course consists in practical work in the Clinical Laboratory on two afternoons a week during May and June. The various methods of examining blood, sputum, secretions, excretions, and in general the applications of the microscope to diagnosis, and other aspects of clinical medicine, will be taught practically.

4. MEDICINE

Instruction in Medicine is given under the direction of Dr. William Osler, Professor of Medicine in the Johns Hopkins University and Physician-in-Chief to the Hospital, with whom are associated Dr. W. D. Booker, Clinical Professor of Diseases of Children, Dr. H. M. Thomas, Clinical Professor of Diseases of the Nervous System, Dr. W. S. Thayer, Associate Professor of Medicine, Dr. T. B. Futcher, Associate in Medicine, and Drs. Frank R. Smith and H. B. Jacobs, Instructors in Medicine.

I. WARD-WORK.

A class of not more than twenty-five is taken into the wards on three mornings in the week at nine o'clock. The members see the new cases examined, have opportunity themselves personally to examine patients, and especially to obtain proficiency in physical diagnosis.

II. DISPENSARY.

Opportunities are afforded to see cases in the medical dispensary.

III. CLINICS.

Dr. Osler or Dr. Thayer gives a weekly clinic in the amphitheatre upon cases or groups of cases illustrating points in diagnosis or treatment of general diseases.

5. SURGERY

Instruction in Surgery, under the direction of Dr. W. S. Halsted, Professor of Surgery, Johns Hopkins University, and Surgeon-in-Chief to the Johns Hopkins Hospital, assisted by Dr. J. M. T. Finney, Associate in Surgery, and Dr. J. C. Bloodgood, Assistant in Surgery and Resident Surgeon to the Hospital, is as follows:

I. WARDS.

Bedside teaching in general surgery is given by Dr. Halsted, or the Resident Surgeon, once each week.

II. PRIVATE OPERATING ROOM.

Operations are performed at 10 A. M., to which a limited number of students are admitted.

III. DISPENSARY.

Opportunities are afforded here to see cases in:

(1) *Minor Surgery.*—Clinics or class-room demonstrations are given by Dr. J. M. T. Finney, Associate in Surgery.

(2) *Genito-Urinary Surgery.*—Clinics and class-room demonstrations are given by the Assistant in Genito-Urinary Surgery.

IV. CLINICS.

Dr. Halsted or Dr. Finney gives a weekly clinic in the amphitheatre.

6. GYNECOLOGY

Instruction in Gynecology, under the direction of Dr. H. A. Kelly, Professor of Gynecology and Obstetrics in the Johns Hopkins University and Gynecologist-in-Chief and Obstetrician to the Hospital, Dr. W. W. Russell, Associate in Gynecology, and Assistants, is given according to the following plan:

I. PRIVATE OPERATING ROOM.—The privileges of this room to see operations by Drs. Kelly and Russell are extended to a limited number of physicians. Operations are made four times weekly at 9.30 A. M.

II. WARDS.—Instruction is given twice weekly in the wards upon the after-treatment of cases which have been operated upon.

III. CLINICS.—Other cases admitted to the wards for treatment and operation are used for purposes of instruction, either in the weekly clinics or at the bedside.

IV. GYNECOLOGICAL DIAGNOSIS.—This work consists of the examination, under anæsthesia, of cases referred from the gynecological dispensary. Many of these cases are subsequently operated upon before the class.

7. SPECIAL DEPARTMENTS OF PRACTICAL MEDICINE AND SURGERY

I. DERMATOLOGY.—Clinics and class-room demonstrations are given by Dr. J. Williams Lord or Dr. T. Caspar Gilchrist, Associates in Dermatology in the Johns Hopkins University and Dermatologists to the Hospital.

II. DISEASES OF CHILDREN.—Clinics and class-room demonstrations are given by Dr. William D. Booker, Clinical Professor of Diseases of Children.

III. DISEASES OF THE NERVOUS SYSTEM.—Clinics and class-room demonstrations are given by Dr. Henry M. Thomas, Clinical Professor of Diseases of the Nervous System.

IV. GENITO-URINARY DISEASES. (See under Surgery.)

V. LARYNGOLOGY AND RHINOLOGY.—Clinics and class-room demonstrations are given by Dr. John N. Mackenzie, Clinical Professor of Laryngology and Laryngologist to the Hospital, or by his assistants.

VI. OPHTHALMOLOGY AND OTOLOGY.—Clinics and class-room demonstrations are given by Dr. Samuel Theobald, Clinical Professor of Ophthalmology and Otology and Ophthalmologist and Otologist to the Hospital, and Dr. Robert

L. Randolph, Associate in Ophthalmology and Otology and Assistant Ophthalmologist and Otologist to the Hospital.

FEES FOR GRADUATE COURSES

Graduates of medical colleges may be admitted to all the courses in Medicine, Surgery, Gynecology, and Special Departments of Practical Medicine and Surgery for the sum of $100 (not including the Laboratory Courses in Pathology, Bacteriology, and Clinical Microscopy), and to single courses on the payment of the fees below named:—

Medicine,	$25
Surgery,	25
Gynecology,	25
Each of the Special Departments of Practical Medicine and Surgery,	25
Clinical Microscopy,	25
Pathological Histology (including post-mortem examinations and pathological demonstrations),	25
Bacteriology,	25
Advanced and special work,	25
Preliminary Course in Normal Histology,	25

In the Pathological, Bacteriological, and Clinical Laboratories special charges are made for breakage and for damage to apparatus. A deposit of ten dollars as caution money is required, which is returned when the student leaves, if there are no charges against him.

Before entering upon any course of instruction in the Medical School, the student must obtain from the Dean of the Medical School, or his representative, a card certifying that he is qualified to follow the desired course. This card must be presented at the Treasurer's office of the University, where the fees must be paid before permission is granted to attend.

Inquiries should be addressed to the Registrar of the Johns Hopkins Medical School, Baltimore.

JOHN MURPHY & CO., PRINTERS, BALTIMORE.

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JOHNS HOPKINS
MEDICAL SCHOOL

ESTABLISHED BY THE JOHNS HOPKINS UNIVERSITY
IN CONNECTION WITH THE JOHNS HOPKINS HOSPITAL
BALTIMORE, MARYLAND

SIXTH ANNUAL ANNOUNCEMENT
1898–99

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THE
JOHNS HOPKINS
MEDICAL SCHOOL

Established by the Johns Hopkins University
in connection with the Johns Hopkins Hospital
Baltimore, Maryland

SIXTH ANNUAL ANNOUNCEMENT
1898-99

THE JOHNS HOPKINS PRESS
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CONTENTS

PAGE
Trustees of the Johns Hopkins University - - - - - - 5
Trustees of the Johns Hopkins Hospital - - - - - - - 5
Calendar - - - - - - - - - - - - - - 6
The Faculty of Medicine - - - - - - - - - - 7
Advisory Board of the Medical School - - - - - - - 14
Standing Committees of the Faculty - - - - - - - 15

PART I. CATALOGUE AND ANNOUNCEMENT OF THE COURSES OF INSTRUCTION FOR CANDIDATES FOR THE DEGREE OF DOCTOR OF MEDICINE - - - - - - - - - - 17

- Candidates for the Degree of M. D. - - - - - - - 19
- Doctors of Medicine of the Johns Hopkins University - - 27
- General Statement - - - - - - - - - - - 28
- Requirements for Admission - - - - - - - - 29
- Admission to Advanced Standing - - - - - - - 31
- General Plan of Instruction - - - - - - - - 31
- Laboratories - - - - - - - - - - - - - 33
- Clinical Opportunities - - - - - - - - - - 35
- Microscopes - - - - - - - - - - - - - 35
- Libraries - - - - - - - - - - - - - - 36
- Medical Societies - - - - - - - - - - - 36
- Publications - - - - - - - - - - - - - 36
- Courses of Instruction - - - - - - - - - - 37
  - Anatomy, Histology, and Microscopic Anatomy - - - 37
  - Physiology - - - - - - - - - - - - - 41
  - Physiological Chemistry - - - - - - - - 42
  - Toxicology, Pharmacology, and Practical Therapeutics - 43
  - Pathology and Bacteriology - - - - - - - 46
  - Medicine and Clinical Microscopy - - - - - - 48
  - Surgery - - - - - - - - - - - - - 51
  - Obstetrics - - - - - - - - - - - - - 53
  - Gynecology - - - - - - - - - - - - 54
  - Special Departments of Practical Medicine and Surgery - 55
    - Dermatology - - - - - - - - - - - 55
    - Diseases of Children - - - - - - - - - 56

PAGE

    - Diseases of the Nervous System - 56
    - Genito-Urinary Diseases - 57
    - Laryngology and Rhinology - 58
    - Ophthalmology and Otology - 58
    - Psychiatry - 59
  - Hygiene - 59
  - Forensic Medicine - 60
  - Medical Zoology - 60
  - History and Literature of Medicine - 60
  - Special Lectures - 61
- Programme of Courses - 62
- Annual Examinations - 66
- Hospital Appointments - 67
- Requirements for Graduation - 67
- Charges for Tuition - 68
- Appendix - 69
  - Endowment - 69
  - The Women's Medical School Fund - 70
  - The Mary Elizabeth Garrett Fund - 71

PART II. CATALOGUE AND ANNOUNCEMENT OF THE SPECIAL COURSES OF INSTRUCTION FOR GRADUATES IN MEDICINE 75

- Catalogue of Physicians Attending Special Courses - 77
- General Information - 81
- Regulations regarding Microscopes - 82
- Statements as to the Courses for Graduates in Medicine - 83
  - Histology and Microscopic Anatomy - 83
  - Pathology and Bacteriology - 83
  - Clinical Microscopy - 85
  - Medicine - 85
  - Surgery - 86
  - Gynecology - 87
  - Dermatology - 87
  - Diseases of Children - 87
  - Diseases of the Nervous System - 88
  - Genito-Urinary Diseases - 88
  - Laryngology and Rhinology - 88
  - Ophthalmology and Otology - 88
- Fees for Graduate Courses - 89
- Index - 91

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CALENDAR, 1898-99

Commencement Day falls on Tuesday, June 14, 1898.

The sixth academic year begins October 1, 1898, and continues till June 13, 1899.

Candidates for admission will assemble in the Biological Laboratory of the University on Friday, September 30, and Saturday, October 1, 1898.

The instruction of classes begins Tuesday, October 4, 1898.

The Christmas Recess begins Friday evening, December 23, 1898.

Exercises will be resumed Tuesday morning, January 3, 1899.

Commemoration Day of the Johns Hopkins University falls on Wednesday, February 22, 1899.

The Spring Recess begins Thursday morning, March 30, and closes Wednesday evening, April 5, 1899.

The courses for Graduates in Medicine begin Monday, May 1, and close Friday, June 30, 1899.

THE FACULTY OF MEDICINE

The names are arranged in the several groups in the order in which the members of the staff assumed their duties.

PRESIDENT OF THE UNIVERSITY

DANIEL C. GILMAN, LL. D.

A. B., Yale University, 1852, and A.M., 1855; LL.D., Harvard University, 1876, St. John's College, 1876, Columbia University, 1887, Yale University, 1889, University of North Carolina, 1889, and Princeton University, 1896; Professor in Yale University, 1856-72; President of the University of California, 1872-75; Corresponding Member of the British Association; Officer of Public Instruction in France.

1300 Eutaw Place.

PROFESSORS

WILLIAM H. WELCH, M. D., LL. D.

Professor of Pathology (and Dean until October 1, 1898).

A. B., Yale University, 1870; M. D., Columbia University (College of Physicians and Surgeons, N. Y.), 1875; M. D. (Hon.), University of Pennsylvania, 1894; LL. D., Western Reserve University, 1894, and Yale University, 1896; Professor of Pathological Anatomy and General Pathology in the Bellevue Hospital Medical College, N. Y., 1879-84; *Pathologist to the Johns Hopkins Hospital.*

935 St. Paul St.

IRA REMSEN, M. D., PH. D., LL. D.

Professor of Chemistry.

A. B., College of the City of New York, 1865; M. D., Columbia University (College of Physicians and Surgeons, N. Y.), 1867; Ph. D., University of Göttingen, 1870; LL. D., Columbia University, 1893, and Princeton University, 1896; Professor of Chemistry in Williams College, 1872-76, and previously Assistant in Chemistry in the University of Tübingen; Corresponding Member of the British Association; Foreign Member, Chemical Society of London; Honorary Member, Pharmaceutical Society of Great Britain.

12 E. Biddle St.

WILLIAM OSLER, M. D., LL. D.

Professor of the Principles and Practice of Medicine, and Dean (after October 1, 1898).

M. D., McGill University, 1872, and LL. D., 1895; Fellow of the Royal College of Physicians, London; Fellow of the Royal Society of London; Professor of the Institutes of Medicine, McGill University, Montreal, 1874-84; Professor of Clinical Medicine, University of Pennsylvania, 1884-89; *Physician in Chief to the Johns Hopkins Hospital.*

1 W. Franklin St.

Henry M. Hurd, M. D., LL. D.

Professor of Psychiatry.

A. B., University of Michigan, 1863, M.D., 1866, A. M., 1870, and LL. D., 1890; Superintendent of the Eastern Michigan Asylum, 1878-89; *Superintendent of the Johns Hopkins Hospital.*

The Johns Hopkins Hospital.

William S. Halsted, M. D.

Professor of Surgery.

A. B., Yale University, 1874; M. D., Columbia University (College of Physicians and Surgeons, N. Y.), 1877; formerly Attending Surgeon to the Presbyterian and Bellevue Hospitals, Associate Surgeon to Roosevelt Hospital, and Surgeon in Chief to the Emigrant Hospital, New York; *Surgeon in Chief to the Johns Hopkins Hospital.*

1201 Eutaw Place.

Howard A. Kelly, M. D.

Professor of Gynecology and Obstetrics.

A. B., University of Pennsylvania, 1877, and M. D., 1882; Associate Professor of Obstetrics, University of Pennsylvania, 1888-89; *Gynecologist to the Johns Hopkins Hospital.*

1406 Eutaw Place.

Franklin P. Mall, M. D.

Professor of Anatomy.

M. D., University of Michigan, 1883; Fellow of the Johns Hopkins University, 1886-88, and Assistant in Pathology, 1888-89; Adjunct Professor of Anatomy, Clark University, 1889-92; Professor of Anatomy, University of Chicago, 1892-93.

200 E. Preston St.

John J. Abel, M. D.

Professor of Pharmacology.

Ph. B., University of Michigan, 1883; M. D., University of Strassburg, 1888; Professor of Materia Medica and Therapeutics, University of Michigan, 1891-93.

1604 Bolton St.

William H. Howell, Ph. D., M. D.

Professor of Physiology.

A. B., Johns Hopkins University, 1881, Fellow, 1882-84, Ph. D., 1884, Assistant in Biology, 1884-85, Associate, 1885-88, and Associate Professor, 1888-89; Lecturer, University of Michigan, 1889-90, M. D., 1890, and Professor of Physiology and Histology, 1890-92; Associate Professor of Physiology, Harvard University, 1892-93.

232 W. Lanvale St.

William K. Brooks, Ph. D., LL. D.

Professor of Comparative Anatomy and Zoölogy.

A. B., Williams College, 1870, and LL. D., 1893; Ph. D., Harvard University, 1875; Fellow, Johns Hopkins University, 1876, Associate, 1876-83, and Associate Professor, 1883-91; Fellow of the Royal Microscopical Society of London.

Lake Roland.

CLINICAL PROFESSORS

WILLIAM D. BOOKER, M. D.

Clinical Professor of Pediatrics.

M. D., University of Virginia, 1867; Attending Physician to The Thomas Wilson Sanitarium, Baltimore; *Associate in Pediatrics, The Johns Hopkins Hospital and Dispensary.*

851 Park Av.

JOHN N. MACKENZIE, M. D.

Clinical Professor of Laryngology and Rhinology.

M. D., University of Virginia, 1876, and New York University, 1877; Corresponding Fellow of the Laryngological, Rhinological, and Otological Association of Great Britain; Corresponding Member of the Laryngological, Rhinological, and Otological Society of France; *Laryngologist, The Johns Hopkins Hospital and Dispensary.*

879 Park Av.

SAMUEL THEOBALD, M. D.

Clinical Professor of Ophthalmology and Otology.

M. D., University of Maryland, 1867; Surgeon to the Baltimore Eye, Ear and Throat Charity Hospital; *Ophthalmic and Aural Surgeon, The Johns Hopkins Hospital.*

304 W. Monument St.

HENRY M. THOMAS, M. D.

Clinical Professor of Neurology.

M. D., University of Maryland, 1884; *Associate in Clinical Neurology, The Johns Hopkins Hospital and Dispensary.*

1228 Madison Ave.

J. WILLIAMS LORD, M. D.

Clinical Professor of Dermatology and Instructor in Anatomy.

A. B., Johns Hopkins University, 1884; M. D., University of Pennsylvania, 1887; *Dermatologist to the Johns Hopkins Hospital and Dispensary.*

825 N. Arlington Ave.

T. CASPAR GILCHRIST, M. R. C. S.

Clinical Professor of Dermatology.

1st. M. B., University of London, 1886; M. R. C. S., and L. S. A., London, 1887; *Dermatologist to the Johns Hopkins Hospital and Dispensary.*

2118 Mt. Royal Terrace.

ASSOCIATE PROFESSORS

SIMON FLEXNER, M. D.

Associate Professor of Pathology.

M. D., University of Louisville, 1889; Fellow in Pathology, Johns Hopkins University, 1891-92, Associate in Pathology, 1892-95; *Resident Pathologist, The Johns Hopkins Hospital.*

The Johns Hopkins Hospital.

J. Whitridge Williams, M. D.

Associate Professor of Obstetrics.

A. B., Johns Hopkins University, 1886; M. D., University of Maryland, 1888; *Associate in Obstetrics, The Johns Hopkins Hospital.* 1128 Cathedral St.

Lewellys F. Barker, M. B.

Associate Professor of Anatomy.

M. B., University of Toronto, 1890; Fellow in Pathology, Johns Hopkins University, 1892-94; Assistant and Associate in Anatomy, 1893-95; *Assistant Resident Pathologist, The Johns Hopkins Hospital.* The Johns Hopkins Hospital.

William S. Thayer, M. D.

Associate Professor of Medicine.

A. B., Harvard University, 1885, and M. D., 1889; Associate in Medicine, 1894-96; *Resident Physician, The Johns Hopkins Hospital.* The Johns Hopkins Hospital.

John M. T. Finney, M. D.

Associate Professor of Surgery.

A. B., Princeton University, 1884; M. D., Harvard University, 1888; *Associate in Surgery, The Johns Hopkins Hospital.* 923 N. Charles St.

LECTURERS

John S. Billings, M. D., LL. D.

Lecturer on the History and Literature of Medicine.

A. B., Oxford College (Ohio), 1857, and A. M., 1860; M. D., University of Cincinnati, 1860; LL. D., University of Edinburgh, 1884, Harvard University, 1886; D. C. L., University of Oxford, 1889; M. D. (Hon.), University of Dublin, 1892; Deputy Surgeon-General, U. S. Army (*retired*): Director of the Laboratory of Hygiene, University of Pennsylvania, 1895-96; Director of the New York Public Library. 32 E. 31st St., New York.

Charles Wardell Stiles, Ph. D., M. S.

Lecturer on Medical Zoölogy.

Ph. D., University of Leipsig, 1890; M. S. (Hon.), Wesleyan University, 1896: Corresponding Member, Society of Biology and Academy of Medicine (Paris); Zoölogist, U. S. Bureau of Animal Industry. Bureau of Animal Industry, Washington.

Alexander C. Abbott, M. D.

Lecturer on Hygiene.

M. D., University of Maryland, 1884; Assistant in Bacteriology and Hygiene, Johns Hopkins University, 1889-91; Professor of Hygiene and Director of the Laboratory of Hygiene, University of Pennsylvania. 221 S. 44th St., Philadelphia.

ROBERT FLETCHER, M. R. C. S., M. D.

Lecturer on Forensic Medicine.

M. R. C. S., England, 1844; M. D. (Hon.), Columbian University, 1884; Associate Fellow, College of Physicians of Philadelphia; Principal Assistant Librarian, Library of the Surgeon General's Office, U. S. A. Army Medical Museum, Washington.

ASSOCIATES

GEORGE P. DREYER, PH. D.

Associate in Physiology.

A. B., Johns Hopkins University, 1887, Fellow in Biology, 1889–90, and Ph. D., 1890.
137 Jackson Place.

WILLIAM W. RUSSELL, M. D.

Associate in Gynecology.

M. D., University of Pennsylvania, 1890; Resident Gynecologist, The Johns Hopkins Hospital, 1894–95.
1415 Eutaw Place.

HENRY J. BERKLEY, M. D.

Associate in Neuro-Pathology.

M. D., University of Maryland, 1881; Attending Physician to the City Asylum at Bay View.
1303 Park Ave.

ROBERT L. RANDOLPH, M. D.

Associate in Ophthalmology and Otology.

M. D., University of Maryland, 1884; *Assistant Ophthalmic and Aural Surgeon to the Johns Hopkins Hospital and Dispensary.* 816 Park Ave.

THOMAS B. ALDRICH, PH. D.

Associate in Physiological Chemistry.

Ph. D., University of Jena, 1891, and Assistant in Chemistry, Jena, 1891–92.
1601 Madison Ave.

THOMAS B. FUTCHER, M. B.

Associate in Medicine.

M. B., University of Toronto, 1893; Assistant Resident Physician, The Johns Hopkins Hospital, 1894–95. The Johns Hopkins Hospital.

JOSEPH C. BLOODGOOD, M. D.

Associate in Surgery.

S. B., University of Wisconsin, 1883; M. D., University of Pennsylvania, 1891; Resident Surgeon, The Johns Hopkins Hospital, 1893–97. The Johns Hopkins Hospital.

THOMAS S. CULLEN, M. B.

Associate in Gynecology.

M. B., University of Toronto, 1890; Assistant Resident Gynecologist, The Johns Hopkins Hospital, 1892–96, and Resident Gynecologist, 1896–97. 3 W. Preston St.

Ross G. Harrison, Ph. D.

Associate in Anatomy.

A. B., Johns Hopkins University, 1890, Fellow in Biology, 1893-94, and Ph. D., 1894; Lecturer in Morphology, Bryn Mawr College, 1894-95.
2018 Park Ave.

Reid Hunt, Ph. D., M. D.

Associate in Pharmacology.

A. B., Johns Hopkins University, 1891, Fellow in Biology, 1894-96, and Ph. D., 1896; M. D., College of Physicians and Surgeons (Baltimore), 1896; Tutor in Physiology, Columbia University (College of Physicians and Surgeons, N. Y.), 1896-98.

Louis E. Livingood, M. D.

Associate in Pathology.

A. B., Princeton University, 1890; M. D., University of Pennsylvania, 1895; Fellow in Pathology, Johns Hopkins University, 1895-96.
The Johns Hopkins Hospital.

INSTRUCTORS AND ASSISTANTS

Adolph G. Hoen, M. D.

Instructor in Photo-Micrography.

M. D., University of Maryland, 1872.
713 Greenmount Ave., Annex.

Frank R. Smith, M. D.

Instructor in Medicine.

A. M., University of Cambridge (England), 1882; M. D., University of Maryland, 1891; Assistant Resident Physician, Johns Hopkins Hospital, 1891-93; *Chief of Medical Clinic, The Johns Hopkins Dispensary*.
1126 Cathedral St.

Henry Barton Jacobs, M. D.

Instructor in Medicine.

A. B., Harvard University, 1883, M. D., 1887, and Assistant in Botany, 1883-85.
11 W. Mt. Vernon Place.

Hugh H. Young, M. D.

Instructor in Genito-Urinary Diseases.

A. B. and A. M., University of Virginia, 1893, and M. D., 1894; *Assistant Resident Surgeon, The Johns Hopkins Hospital.*
The Johns Hopkins Hospital.

Albert C. Crawford, M. D.

Assistant in Pharmacology.

M. D., College of Physicians and Surgeons (Balt.), 1893.
1009 N. Caroline St.

GEORGE W. DOBBIN, M. D.

Assistant in Obstetrics.

A. B., Johns Hopkins University, 1891; M. D., University of Maryland, 1894; *Assistant Resident Obstetrician, The Johns Hopkins Hospital.*

The Johns Hopkins Hospital.

WALTER JONES, PH. D.

Assistant in Physiological Chemistry and Toxicology.

A. B., Johns Hopkins University, 1888, and Ph. D., 1891; Professor of Natural Science, Wittenberg College, 1891–92; Professor of Analytical Chemistry, Purdue University, 1892–95.

1010 McCulloh St.

SYDNEY M. CONE, M. D.

Assistant in Surgical Pathology.

A. B., Johns Hopkins University, 1890; M. D., University of Pennsylvania, 1893; Assistant Resident Surgeon, The Johns Hopkins Hospital, 1894–95.

1607 Eutaw Place.

NORMAN MACL. HARRIS, M. B.

Assistant in Bacteriology.

M. B., University of Toronto, 1894.

1020 N. Broadway.

HARVEY W. CUSHING, M. D.

Assistant in Surgery.

A. B., Yale University, 1891; A. M. and M. D., Harvard University, 1895; *Resident Surgeon, The Johns Hopkins Hospital.*

The Johns Hopkins Hospital.

CHARLES RUSSELL BARDEEN, M. D.

Assistant in Anatomy.

A. B., Harvard University, 1893; M. D., Johns Hopkins University, 1897.

935 St. Paul St.

JESSE W. LAZEAR, M. D.

Assistant in Clinical Microscopy.

A. B., Johns Hopkins University, 1889; M. D., Columbia University (College of Physicians and Surgeons, N. Y.), 1892; *Assistant Resident Physician, The Johns Hopkins Hospital.*

The Johns Hopkins Hospital.

STEWART PATON, M. D.

Assistant in Clinical Neurology.

A. B., Princeton University, 1886, and A. M., 1889; M. D., Columbia University (College of Physicians and Surgeons, N. Y.), 1889; *Assistant Attending Physician to the City Asylum at Bay View.*

58 W. Biddle St.

J. LEE WALZ, PH. G.

Assistant in Pharmacy.

Ph. G., Baltimore College of Pharmacy, 1888; *Pharmacist to the Johns Hopkins Hospital.*

The Johns Hopkins Hospital.

ELIZABETH HURDON, M. D.

Assistant in Gynecology.

M. D., Trinity University (Toronto), 1895; *Assistant in Gynecology, The Johns Hopkins Hospital.*

2313 N. Charles St.

HENRY O. REIK, M. D.

Assistant in Ophthalmology and Otology.

M. D., University of Maryland, 1891; Assistant Ophthalmic and Aural Surgeon to the Baltimore Eye, Ear and Throat Charity Hospital; *Assistant in Ophthalmology and Otology, The Johns Hopkins Dispensary.*

5 W. Preston St.

ADVISORY BOARD OF THE MEDICAL SCHOOL

Daniel C. Gilman (*President*),
Ira Remsen,
William H. Welch (Dean until October 1, 1898),
William Osler (Dean after October 1, 1898),
Henry M. Hurd,
William S. Halsted,
Howard A. Kelly,
Franklin P. Mall,
John J. Abel,
William H. Howell,
William K. Brooks.

This Board was constituted by resolution of the Trustees (April 3, 1893) "to report to the Trustees from time to time their suggestions and to prepare and carry forward the proper arrangements for the instruction and graduation of medical students."

STANDING COMMITTEES OF THE FACULTY

EXECUTIVE COMMITTEE

The President of the University,
The Dean of the Medical Faculty,
The Superintendent of the Johns Hopkins Hospital.

COMMITTEE ON THE LIBRARY

Franklin P. Mall,
William Osler,
Henry M. Hurd,
Nicholas Murray (Librarian of the University).

COMMITTEE ON ADMISSIONS

The Dean,
John J. Abel,
William H. Howell,
Franklin P. Mall,
Ira Remsen.

COMMITTEE ON INSTRUCTION AND EXAMINATIONS FOR THE FIRST AND SECOND YEARS OF THE COURSE

William H. Howell,
Franklin P. Mall,
John J. Abel,
William H. Welch.

COMMITTEE ON INSTRUCTION AND EXAMINATIONS FOR THE THIRD AND FOURTH YEARS OF THE COURSE

William Osler,
William S. Halsted,
Howard A. Kelley,
J. Whitridge Williams.

COMMITTEE ON GRADUATE INSTRUCTION

Henry M. Hurd,
William Osler,
William S. Thayer,
John M. T. Finney,
Simon Flexner,
Henry M. Thomas.

COMMITTEE ON THE ANNOUNCEMENT

The Dean,
Henry M. Hurd,
Franklin P. Mall,
William H. Welch.

PART I

CATALOGUE AND ANNOUNCEMENT OF THE COURSES OF INSTRUCTION FOR CANDIDATES FOR THE DEGREE OF DOCTOR OF MEDICINE

STUDENTS, 1897-98

CANDIDATES FOR THE DEGREE OF DOCTOR OF MEDICINE

Fourth Year

BAER, WILLIAM STEVENSON A. B., Johns Hopkins University, 1894.	Baltimore	24 *N. Broadway*
CALVERT, WILLIAM JEPHTHA A. B., University of Kentucky, 1893; Graduate Student, Kentucky State College, 1893-94.	Lexington, Ky.	422 *N. Broadway*
CASSIDY, PATRICK JOSEPH A. B., Yale University, 1894.	Norwich, Conn.	1727 *Fairmount Av.*
COE, JOHN WILLIAMS, JR. Ph. B., Yale University, 1893.	Meriden, Conn.	1734 *E. Fayette St.*
COX, WALTER A. B., Johns Hopkins University, 1894.	Bel Alton	311 *N. Broadway*
DAWSON, PERCY MILLARD A. B., Johns Hopkins University, 1894.	Montreal, Canada	1640 *E. Fayette St.*
ELTING, ARTHUR WELLS A. B., Yale University, 1894.	Upper Red Hook, N. Y.	412 *N. Broadway*
FORD, WILLIAM WEBER A. B., Adelbert College, 1893.	Baltimore	718 *N. Howard St.*
HASTINGS, THOMAS WOOD A. B., Johns Hopkins University, 1894.	Morristown, N. J.	802 *N. Broadway*
HERRICK, ALFRED BIRCH A. B., Williams College, 1894.	Amsterdam, N. Y.	812 *N. Broadway*
JOHNSTONE, MARY MARGARET SEWALL A. B., Smith College, 1894; Harvard Summer School, 1894.	Newburyport, Mass.	417 *N. Charles St.*
KNOX, JAMES HALL MASON, JR. A. B., Yale University, 1892, and Ph. D., 1894; A. M., Lafayette College, 1896.	Baltimore	13 *E. Preston St.*
LANGFELD, MILLARD A. B., Johns Hopkins University, 1893.	Baltimore	2226 *Eutaw Place*
LIGHT, GERTRUDE S. B., University of Wisconsin, 1894.	Milwaukee, Wis.	417 *N. Charles St.*
LUPTON, FRANK ALLEMONG S. B., Alabama Polytechnic Institute, 1891, and M. S., 1892; Graduate Student, Johns Hopkins University, October to January, 1893-94.	Auburn, Ala.	527 *N. Wolfe St.*
MADISON, JAMES DANIEL S. B., University of Wisconsin, 1894.	Mazomanie, Wis.	1734 *E. Fayette St.*
MARSHALL, HARRY TAYLOR A. B., Johns Hopkins University, 1894.	Baltimore	1209 *St. Paul St.*

O'CONNELL, DELIA MARIA A. B., Vassar College, 1893; Graduate Student, Mass. Institute of Technology, 1893-94.	Marlborough, Mass.	135 *Jackson Place*
PERKINS, ROGER GRISWOLD A. B., Union College, 1893, and Harvard University, 1894.	Schenectady, N. Y.	1128 *McCulloh St.*
PORTER, KATHERINE A. B., Bryn Mawr College, 1894.	Baltimore	2100 *N. Calvert St.*
PRATT, JOSEPH HERSEY Ph. B., Yale University, 1894.	North Middleboro, Mass.	1640 *E. Fayette St.*
SANDS, GEORGIANA A. B., Vassar College, 1893; Graduate Student, Barnard College (N. Y.), 1893-94.	Port Chester, N. Y.	887 *Park Av.*
SCHENCK, BENJAMIN ROBINSON A. B., Williams College, 1894.	Syracuse, N. Y.	812 *N. Broadway*
STEINER, WALTER RALPH A B., Yale University, 1892, and A. M., 1895; Graduate Student, Johns Hopkins University, 1892-94.	Baltimore	1038 *N. Eutaw St.*
WALKER, EMMA ELIZABETH A. B., Smith College, 1887.	Parkersburg, W. Va.	417 *N. Charles St.*
WHITRIDGE, ANDREW HENDERSON S. B., Harvard University, 1894.	Baltimore	18 *W. Read St.*

(26)

Third Year

BROWN, LAWRASON A. B., Johns Hopkins University, 1895.	Casanova, Va.	1318 *W. Lanvale St.*
BROWNELL, EDWARD ERLE Ph. B., Yale University, 1895.	Woodland, Cal.	1005 *N. Charles St.*
BUCKLER, HUMPHREY WARREN A. B., Johns Hopkins University, 1895.	Baltimore	806 *Cathedral St.*
COLE, RUFUS IVORY S. B., University of Michigan, 1896.	Peru, Ill.	139 *Jackson Place*
DAVIS, FRANK CURTIS A. B., Amherst College, 1895.	Minneapolis, Minn.	1005 *N. Charles St.*
DAVIS, JOHN STAIGE Ph. B., Yale University, 1895.	Baltimore	1005 *N. Charles St.*
EMERSON, CHARLES PHILLIPS A. B., Amherst College, 1894.	Methuen, Mass.	103 *Jackson Place*
EPLER, BLANCH NETTLETON S. B., University of California, 1895.	Oakland, Cal.	129 *E. North Av.*
ERLANGER, JOSEPH S. B., University of California, 1895.	San Francisco, Cal.	126 *Jackson Place*
EVANS, PHILIP SAFFERY, JR. A. B., Yale University, 1895.	Baltimore	802 *N. Broadway*
FOLLIS, RICHARD HOLDEN, JR. Ph. B., Yale University, 1895.	San Francisco, Cal.	1005 *N. Charles St.*
FULTON, FRANK TAYLOR S. B., Knox College, 1894; A. B., Johns Hopkins University, 1895.	Warsaw, Ill.	1734 *E. Fayette St.*
GALLAGHER, JAMES DATON A. B., Johns Hopkins University, 1895.	Steubenville, O.	707 *N. Broadway*

HARRIS, HENRY A. B., Leland Stanford Jr. University, 1895.	Olympia, Wash.	521 *N. Wolfe St.*
HOYE, HENRY JOSEPH A. B., Brown University, 1895.	Providence, R. I.	114 *Jackson Place*
LADD, LOUIS WILLIAMS A. B., Yale University, 1896.	Baltimore	139 *Jackson Place*
LITTLE, CHARLES SUMNER A. B., Wabash College, 1894.	Evansville, Ind.	1006 *N. Broadway*
LUETSCHER, JOHN ARTHUR S. B., University of Wisconsin, 1895.	Sauk City, Wis.	104 *Jackson Place*
LYNCH, FRANK WORTHINGTON A. B., Adelbert College, 1895.	Cleveland, O.	718 *N. Howard St.*
MAGEE, CHESTER LEA A. B. and A. M., Leland Stanford Jr. University, 1895-96.	San Diego, Cal.	519 *N. Wolfe St.*
MOORE, HUGH MILLER S. B. and M. S., Miami University, 1895.	Oxford, O.	1033 *N. Broadway*
OLIVER, EDWARD SPILLER A. B., Johns Hopkins University, 1895.	Mt. Washington	*Mt. Washington*
OTTLEY, CHARLES WILLIAMS A. B., Princeton University, 1893.	Atlanta, Ga.	1727 *Fairmount Av.*
OWSLEY, PAUL OCTAVIUS Ph. B., Yale University, 1895.	Chicago, Ill.	1005 *N. Charles St.*
PLEASANTS, JACOB HALL, JR. A. B., Johns Hopkins University, 1895.	Baltimore	606 *Cathedral St.*
ROSENHEIM, SYLVAN A. B., Johns Hopkins University, 1895.	Baltimore	521 *N. Wolfe St.*
SAMPSON, JOHN ALBERTSON A. B., Williams College, 1895.	Troy, N. Y.	103 *Jackson Place*
STEENSLAND, HALBERT SEVERIN S. B., University of Wisconsin, 1896.	Madison, Wis.	814 *N. Broadway*
STONE, WILLIAM RIDGELY A. B., Princeton University, 1895.	Washington, D. C.	113 *W. Mulberry St.*
STROBEL, EDGAR RANDOLPH A. B., Johns Hopkins University, 1895.	Baltimore	37 *E. North Av.*
VERHOEFF, FREDERICK HERMAN Ph. B., Yale University, 1895.	Louisville, Ky.	1707 *Fairmount Av.*
WILLIAMS, WILLIAM WHITRIDGE A. B., Johns Hopkins University, 1895.	Baltimore	1128 *Cathedral St.*
WYCKOFF, SARAH DELIA S. B., Wellesley College, 1894.	Dayton, O.	1910 *E. Madison St.*
YATES, LAWRENCE Ph. B., Yale University, 1894; S. B., University of Wisconsin, 1895.	Milwaukee, Wis.	1005 *N. Charles St.*

(34)

Second Year

AKERMAN, JOSEPH A. B., University of Georgia, 1894, and Graduate Student, 1895-96.	Athens, Ga.	1727 *Fairmount Av.*
ALLEN, HERBERT WILLIAMS S. B., University of California, 1896.	Oakland, Cal.	810 *N. Broadway*

Austin, Mabel Fletcher **S. B., University of Minnesota, 1896.**	St. Paul, Minn.	804 *N. Broadway*
Beale, Alma Emerson **A. B., Wellesley College, 1891; Marine Biological Laboratory, Wood's Holl, 1893.**	Schaghticoke, N. Y.	2520 *E. Baltimore St.*
Bettmann, Milton **A. B., Harvard University, 1897.**	Cincinnati, O.	812 *N. Broadway*
Briggs, Evelyn **A. B., Leland Stanford Jr. University, 1896.**	Wadsworth, O.	430 *N. Broadway*
Brülle, Herman **A. B. and S. B., Hampden-Sidney College, 1895; Graduate Student, Johns Hopkins University, 1895-96.**	Fredericksburg, Va.	1016 *N. Broadway*
Burnam, Curtis Field **A. B., Central University (Ky.), 1895; Graduate Student, Johns Hopkins University, 1895-96.**	Richmond, Ky.	1128 *McCulloh St.*
Chace, Eleanor Sarah **S. B., Wellesley College, 1894.**	Fall River, Mass.	127 *Jackson Place*
Chittenden, Arthur Smith **A. B., Yale University, 1896.**	Binghamton, N. Y.	1757 *Jefferson St.*
Christian, Henry Asbury **A. B. and A. M., Randolph-Macon College, 1895, and Graduate Student, 1895-96.**	Lynchburg, Va.	804 *N. Broadway*
Dancy, William Remshart **S. B., University of Georgia, 1896.**	Savannah, Ga.	802 *N. Broadway*
Eggers, Augustus Hartje **Ph. B., Yale University, 1896.**	Allegheny, Pa.	806 *N. Broadway*
Evans, Henry Courtney **A. B., Adelbert College, 1896.**	Youngstown, O.	718 *N. Howard St.*
Fairbank, Rose **A. B., Smith College, 1895.**	Hatfield, Mass.	318 *N. Broadway*
Farrar, Clarence B. **A. B., Harvard University, 1896.**	Cattaraugus, N. Y.	413 *N. Charles St.*
Fisher, Arthur Lawrence **S. B., University of California, 1896.**	San Francisco, Cal.	126 *Jackson Place*
Fisher, William Alexander, Jr. **A. B., Princeton University, 1896.**	Baltimore	905 *Cathedral St.*
Fletcher, Howard **A. B., Randolph-Macon College, 1895, and Graduate Student, 1895-96.**	Warrenton, Va.	1757 *Jefferson St.*
Flint, Joseph Marshall **S. B., University of Chicago, 1895.**	Chicago, Ill.	*Govanstown*
Healy, William Patrick **Ph. B., Yale University, 1896.**	Bridgeport, Conn.	810 *N. Broadway*
Hendrickson, William Faithful **A. B., Johns Hopkins University, 1896.**	Baltimore	236 *N. Carey St.*
Hewlett, Albion Walter **S. B., University of California, 1895; Graduate Student, University of Chicago.**	San Mateo, Cal.	802 *N. Broadway*
Kellogg, William Crissey **A. B., Yale University, 1896.**	New Canaan, Conn.	806 *N. Broadway*
Kyes, Preston **A. B., Bowdoin College, 1896.**	North Jay, Me.	813 *N. Broadway*

Lewis, Warren Harmon S. B., University of Michigan, 1896.	Oak Park, Ill.	1757 *Jefferson St.*
Little, Harry Wilson S. B., Wabash College, 1896.	Evansville, Ind.	1006 *N. Broadway*
Lowell, Ellen Louise A. B., Leland Stanford Jr. University, 1896.	Calais, Me.	811 *N. Broadway*
MacCallum, John Bruce A. B., University of Toronto, 1896.	Dunnville, Ont.	132 *Jackson Place*
Marvell, Mary Wilbur S. B., Wellesley College, 1894.	Fall River, Mass.	127 *Jackson Place*
Meltzer, Clara R. A. B., Barnard College, 1896.	New York, N. Y.	420 *N. Broadway*
Mosher, Clelia Duel A. B., Leland Stanford Jr. University, 1893, and A. M., 1894.	Stanford Univ., Cal.	811 *N. Broadway*
Myrick, Hannah Glidden A. B., Smith College, 1896.	Dorchester, Mass.	129 *Jackson Place*
Odell, Anna A. B., Vassar College, 1896.	Detroit, Mich.	430 *N. Broadway*
Rand, Richard Foster Ph. B., Yale University, 1895, and Graduate Student, 1895-96.	Meriden, Conn.	1707 *Fairmount Av.*
Reed, Dorothy M. B. L., Smith College, 1895; Graduate Student, Mass. Institute of Technology, 1895-96.	Leyden, N. Y.	1819 *E. Townsend St.*
Rusk, Glanville Yeisley A. B., Johns Hopkins University, 1896.	Baltimore	2000 *E. Baltimore St.*
Sabin, Florence Rena S. B., Smith College, 1893; Assistant in Zoology, Smith College, 1895-96.	Denver, Col.	129 *Jackson Place*
Sowers, William Francis Mattingly A. B., Princeton University, 1895.	Washington, D. C.	517 *Cathedral St.*
Stone, Ellen Appleton A. B., Radcliffe College, 1895; A. M., Brown University, 1896.	Providence, R. I.	122 *Jackson Place*
Thayer, Lawrence Hanthorn A. B., Denison University, 1896.	Granville, O.	1016 *N. Broadway*
Warren, Mortimer A. B., Bowdoin College, 1896.	Cumberland Mills, Me.	813 *N. Broadway*
West, John Montgomery A. B., Johns Hopkins University, 1896.	Baltimore	2419 *Maryland Av.*
Woolley, Paul Gerhardt S. B., University of Chicago, 1896.	Chicago, Ill.	1428 *McCulloh St.*

(44)

First Year

Adler, Hermann Morris A. B., Harvard University, 1897.	New York, N. Y.	700 *N. Broadway*
Atherton, Alexander Montague A. B., Wesleyan University, 1897.	Honolulu, H. I.	122 *Jackson Place*
Baetjer, Frederick Harry A. B., Johns Hopkins University, 1897.	Winchester, Va.	615 *Park Av.*

Baldwin, William Dwight A. B., Yale University, 1897.	Haiku, H. I.	1757 *Jefferson St.*
Berry, John McWilliams S. B., Cornell University, 1897.	Peterboro, N. Y.	700 *N. Broadway*
Bloombergh, Horace Dechamps A. B., Lafayette College, 1897.	Easton, Pa.	122 *Jackson Place*
Bosley, John Robert A. B., Western Maryland College, 1896; Graduate Student, Johns Hopkins University, 1896–97.	Baltimore	1607 *Park Av.*
Bunting, Charles Henry S. B., University of Wisconsin, 1896, and Graduate Student, 1896–97.	La Crosse, Wis.	116 *Jackson Place*
Butler, Joel Ives Ph. B., Yale University, 1897.	Meriden, Conn.	112 *Jackson Place*
Carey, Harry Wardell A. B., Yale University, 1897.	Stamford, Conn.	432 *N. Broadway*
Chowning, William Mack S. B., Knox College, 1894; A. B., Johns Hopkins University, 1895.	Rock Island, Ill.	116 *Jackson Place*
Comer, Robert Thornton A. B., University of Alabama, 1896; Graduate Student, Johns Hopkins University, 1896–97.	James, Ala.	1938 *McElderry St.*
Comstock, Elizabeth S. B., University of Wisconsin, 1897.	Baltimore	2310 *Fairmount Av.*
Connor, Guy Leartus A. B., Williams College, 1897.	Detroit, Mich.	700 *N. Broadway*
Connor, Ray A. B., Williams College, 1897.	Detroit, Mich.	700 *N. Broadway*
Drake, George Silas, Jr. A. B., Yale University, 1897.	St. Louis, Mo.	432 *N. Broadway*
Dutcher, Adelaide S. B., University of Wisconsin, 1897.	Madison, Wis.	1909 *Jefferson St.*
Fowler, Harry Atwood S. B., University of Minnesota, 1895; Graduate Student, University of Chicago, 1896.	La Crosse, Wis.	1014 *N. Broadway*
Gay, Frederick Parker A. B., Harvard University, 1897.	Boston, Mass.	1005 *N. Charles St.*
Ghio, John Baptiste A. B., Christian Brothers' College (St. Louis), 1895; Graduate Student, Johns Hopkins University, 1896–97.	St. Louis, Mo.	1024 *N. Broadway*
Graham, Neil Duncan A. B., Johns Hopkins University, 1897.	Falls Church, Va.	602 *N. Charles St.*
Hall, Gardner Wells A. B., Harvard University, 1898.	Newton, Mass.	1005 *N. Charles St.*
Hamman, Louis Virgil A. B., Rock Hill College, 1896; Graduate Student, Johns Hopkins University, 1896–97.	Baltimore	2500 *Madison Av.*
Hastreiter, Rolland Frederick S. B., University of Wisconsin, 1897.	Madison, Wis.	104 *Jackson Place*
Hathaway, Joseph Henry A. B., Iowa College, 1894; A. B., Harvard University, 1896, and A. M., 1897.	Grinnell, Iowa	122 *Jackson Place*
Hitzrot, James Morley A. B., Princeton University, 1897.	McKeesport, Pa.	*Govanstown*

Holden, Gerry Rounds A. B., Yale University, 1897.	Portland, Me.	432 *N. Broadway*
Hume, Edward Hicks A. B., Yale University, 1897.	Bombay, India	1757 *Jefferson St.*
Johnston, William Bernard A. B., Harvard University, 1897.	Washington, D.C.	1005 *N. Charles St.*
Kauffman, Burt Bronson A. B., Yale University, 1897.	St. Louis, Mo.	112 *Jackson Place*
Kaufman, Harry M. A. B., Johns Hopkins University, 1897.	Washington, D. C.	510 *N. Broadway*
Kimball, Arthur Herbert S. B., Amherst College, 1897.	Washington, D. C.	510 *N. Broadway*
Lamson, Theodore Ph. B., Yale University, 1897.	Hartford, Conn.	112 *Jackson Place*
Lewis, Dwight Milton A. B., Yale University, 1897.	New Haven, Conn.	112 *Jackson Place*
Long, Margaret A. B., Smith College, 1895; Graduate Student, Massachusetts Institute of Technology, 1896–97.	Hingham, Mass.	1819 *E. Townsend St.*
Longcope, Warfield Theobald A. B., Johns Hopkins University, 1897.	Baltimore	136 *Richmond St.*
Lyle, Anna Galloway A. B., Leland Stanford Jr. University, 1895.	San Francisco, Cal.	213 *W. Monument St.*
Maddren, William Harvey S. B., Brooklyn Polytechnic Institute, 1896; Graduate Student, Johns Hopkins University, 1896–97.	Brooklyn, N. Y.	1024 *N. Broadway*
Manwaring, Wilfred Hamilton S. B., University of Michigan, 1895.	Ann Arbor, Mich.	26 *E. Mt. Vernon Place*
McKeough, Edward Patrick S. B., Villanova College (Pa.), 1894, and A. B., 1896; Graduate Student, Johns Hopkins University, 1896–97.	Hartford, Conn.	1938 *McElderry St.*
Moore, Elizabeth Sutton S. B., Wilson College (Pa.), 1895; Graduate Student, Cornell University, 1896–97.	Brookville, Pa.	118 *Jackson Place*
Parker, Henry Pickering A. B., Johns Hopkins University, 1896.	Howard County	*St. Denis P. O.*
Pullen, Frances Kenney A. B., Wellesley College, 1896.	Paris, Ky.	344 *W. Preston St.*
Rubel, Maurice J. S. B., University of Chicago, 1897.	Chicago, Ill.	100 *Jackson Place*
Rushmore, Stephen A. B., Amherst College, 1897.	Plainfield, N. J.	1113 *Madison Av.*
Russ, Raymond John S. B., University of California, 1896.	Oakland, Cal.	802 *N. Broadway*
Salter, John Cleveland A. B., Yale University, 1897.	Carbondale, Ill.	432 *N. Broadway*
Simis, Mabel Palmer S. B., Cornell University, 1897.	Vail's Gate, N. Y.	1819 *E. Townsend St.*
Slemons, Josiah Morris A. B., Johns Hopkins University, 1897.	Salisbury	1024 *N. Broadway*

Smith, Herbert Meloy A. B., Roanoke College, 1892, and A. M., 1897; Graduate Student, Johns Hopkins University, 1894-95.	Salem, Va.	1014 *N. Broadway*
Spratt, Charles Nelson S. B., University of Minnesota, 1897.	Minneapolis, Minn.	821 *N. Broadway*
Stein, Gertrude A. B., Radcliffe College, 1898.	Baltimore	215 *E. Biddle St.*
Steinfeld, Albert Louis A. B., Johns Hopkins University, 1897.	Baltimore	318 *N. Carey St.*
Swett, Carlotta Mary A. B., Wellesley College, 1896; Graduate Student, Maine State College, 1896.	Bangor, Me.	344 *W. Preston St.*
Ulrich, Henry Ludwig S. B., Rutgers College, 1897.	Newark, N. J.	806 *N. Broadway*
Underhill, Albert James A. B., Johns Hopkins University, 1897.	Baltimore	*Walbrook*
Walker, Marion Bartholow A. B., Radcliffe College, 1898.	Cambridge, Mass.	122 *Jackson Place*
Warfield, Louis Marshall A. B., Johns Hopkins University, 1897.	Savannah, Ga.	819 *Park Av.*
Warren, George William A. B., Johns Hopkins University, 1897.	Portland, Me.	1024 *N. Broadway*
Watts, Stephen Hurt A. M., Randolph-Macon College, 1896; Graduate Student, University of Virginia, 1896-97.	Lynchburg, Va.	804 *N. Broadway*
Wells, Ernest Alden A. B., Yale University, 1897.	Hartford, Conn.	527 *N. Wolfe St.*
Wells, Mabel A. B., Wellesley College, 1896; Graduate Student, University of Zürich, 1897.	Monticello, Ark.	237 *W. Biddle St.*
Winne, Charles Knickerbacker, Jr. A. B., Johns Hopkins University, 1897.	Baltimore	*Fort McHenry*

(63)

SUMMARY

Fourth Year - - - - - -	26
Third Year - - - - - -	34
Second Year - - - - - -	44
First Year - - - - - -	63
	167

DOCTORS OF MEDICINE OF THE JOHNS HOPKINS UNIVERSITY, 1897

Bardeen, Charles Russell, A. B., Harvard University, 1893.—Assistant in Anatomy, Johns Hopkins Medical School.

Brown, Thomas Richardson, A. B., Johns Hopkins University, 1892.—Resident House Officer, Johns Hopkins Hospital.

Davis, Walter S., S. B., Amherst College, 1893.—Resident House Officer, Johns Hopkins Hospital.

Hamburger, Louis Philip, A. B., Johns Hopkins University, 1893.—Resident House Officer, Johns Hopkins Hospital.

Hunner, Guy Le Roy, S. B., University of Wisconsin, 1893.—Resident House Officer, Johns Hopkins Hospital.

Lyon, Irving Phillips, A. B., Yale University, 1893.—Resident House Officer, Johns Hopkins Hospital.

MacCallum, William George, A. B., University of Toronto, 1894.—Resident House Officer, Johns Hopkins Hospital.

McBryde, Charles Neil, S. B., University of South Carolina, 1891; M. S., Virginia Agricultural and Mechanical College, 1892.—Blacksburg, Va.

Mitchell, James Farnandis, A. B., Johns Hopkins University, 1891.—Resident House Officer, Johns Hopkins Hospital.

Nichols, Joseph Longworth, A. B., Harvard University, 1893.—Fellow in Pathology, Johns Hopkins University.

Opie, Eugene Lindsay, A. B., Johns Hopkins University, 1893.—Resident House Officer, Johns Hopkins Hospital.

Packard, Mary Secord, A. B., Vassar College, 1892; Harvard Summer School, 1893.—Resident House Officer, Johns Hopkins Hospital.

Pancoast, Omar Borton, S. B., Swarthmore College, 1893.—Resident House Officer, Johns Hopkins Hospital.

Penrose, Clement Andariese, A. B., Johns Hopkins University, 1893.—Resident House Officer, Johns Hopkins Hospital.

Strong, Richard Pearson, Ph. B., Yale University, 1893.—Resident House Officer, Johns Hopkins Hospital, 1897–98; Acting Assistant Surgeon, U. S. A.

GENERAL STATEMENT

The Medical Department of the Johns Hopkins University was opened for the instruction of students October, 1893. This School of Medicine is an integral and coördinate part of the Johns Hopkins University, and it also derives great advantages from its close affiliation with the Johns Hopkins Hospital.

The required period of study for the degree of Doctor of Medicine is four years. The instruction begins on the morning of the first Tuesday of October. Candidates for admission are required to be present on Friday and Saturday mornings in the week preceding the first Tuesday of October. The graduating exercises are held on the second Tuesday of June. There are short recesses at Christmas and Easter.

The course of instruction is planned for the professional education of those who have received a liberal education, as indicated by a collegiate degree in arts or science, including a reading knowledge of French and German and adequate training in those branches of science, such as physics, chemistry and biology, which underlie the medical sciences. Men and women are admitted upon the same terms.

In the methods of instruction especial emphasis is laid upon practical work in the Laboratories and in the Dispensary and Wards of the Hospital. While the aim of the School is primarily to train practitioners of medicine and surgery, it is recognized that the medical art should rest upon a suitable preliminary education and upon thorough training in the medical sciences. The first two years of the course are devoted mainly to practical work, combined with demonstrations, recitations and, when deemed necessary, lectures, in the Laboratories of Anatomy, Physiology, Physiological Chemistry, Pharmacology and Toxicology, Pathology and Bacteriology. During the last two years the student is given abundant opportunity for the personal study of cases of disease, his time being spent largely in the Hospital Wards and Dispensary and in the Clinical Laboratories.

Inquiries may be addressed to the Registrar of the Johns Hopkins Medical School.

REQUIREMENTS FOR ADMISSION

As candidates for the degree of Doctor of Medicine the school receives:

1. Those who have satisfactorily completed the Chemical-Biological course which leads to the A. B. degree in this university.
2. Graduates of approved colleges or scientific schools who can furnish evidence: (*a*) That they have acquaintance with Latin and a good reading knowledge of French and German; (*b*) That they have such knowledge of physics, chemistry, and biology as is imparted by the regular minor courses given in these subjects in this university.

The phrase "a minor course," as here employed, means a course that requires a year for its completion. In physics, four class-room exercises and three hours a week in the laboratory are required; in chemistry and biology, four class-room exercises and five hours a week in the laboratory in each subject.

In explanation of the character and amount of the requisite training indicated by the term "Minor Course" in these sciences, it may be stated, with respect to Biology, that the candidate should have followed for at least a year a laboratory course in the structure, life history, and vital activities of selected types of animal and vegetable life. In the Chemical-Biological course for undergraduates in this university the laboratory work in biology at present includes the study of such types as amœba, hæmatococcus, yeast, penicillium, bacteria, mushroom, hydra, vorticella, a fern, a flowering plant, the earthworm, lobster, anodon; the gross and minute anatomy of the frog, the development of its eggs, the structure, formation, and metamorphoses of the tadpole; the study and drawing of the bones of the human skeleton; the comparison of some parts of related vertebrate skeletons; dissection of a mammal; the field and laboratory study of some few flowering plants. The laboratory work is the more important part, the lectures and other exercises subsidiary. It is, of course, not to be understood that this curriculum of biological work must be rigidly followed.

Courses which include botany and zoölogy will be accepted as equivalent to the minor course in biology in this university, provided the work in the laboratory has been adequate. It is important that the candidate should show ability to observe natural objects, to record the observations in words and by drawings, and to use the microscope.

The candidate should have followed a course in general Chemistry for at least a year. This course should include laboratory work, about five hours a week through one year, and lectures and class-room work covering the outlines of inorganic chemistry and the elements of organic chemistry. A good knowledge of the subject as presented in Remsen's "Introduction to the Study of Chemistry" may be regarded as the minimum requirement. A fuller knowledge of Chemistry is desirable.

In Physics, the candidate should have followed a collegiate course for at least one year. This should include four hours a week of class-room work and at least three hours a week of quantitative work in the laboratory. Special attention should be given to theoretical mechanics and to the mechanical and electrical experiments.

3. Those who give evidence by examination that they possess the general education implied by a degree in arts or in science from an approved college or scientific school, and the knowledge of French, German, Latin, physics, chemistry, and biology above indicated.

Applicants for admission will receive blanks to be filled out relating to their previous courses of study.

They are required to furnish certificates from officers of the colleges or scientific schools where they have studied, as to the courses pursued in physics, chemistry, and biology. If such certificates are satisfactory, no examination in these subjects will be required from those who possess a degree in arts or science from an approved college or scientific school.

Candidates who have not received a degree in arts or in science from an approved college or scientific school, will be required (1) to pass, at the beginning of the session in October, the examination for matriculation in the collegiate department of the Johns Hopkins University, (2) then to pass examinations equivalent to those taken by students completing the Chemical-Biological course which leads to the A. B. degree in this University, and (3) to furnish satisfactory certificates that they have had the requisite laboratory training as specified above. It is expected that only in very rare instances will applicants who do not possess a degree in arts or science be able to meet these requirements for admission.

Special workers, not candidates for a degree, will be received at the discretion of the Faculty.

ADMISSION TO ADVANCED STANDING

Applicants for admission to advanced standing must furnish evidence (1) that the foregoing terms of admission as regards preliminary training have been fulfilled, (2) that courses equivalent in kind and amount to those given here, preceding that year of the course for admission to which application is made, have been satisfactorily completed, and (3) must pass examinations at the beginning of the session in October in all the subjects that have been already pursued by the class to which admission is sought. Certificates of standing elsewhere cannot be accepted in place of these examinations. The applicant must have studied as a matriculated medical student in an approved medical school for a period of time at least equal to that already spent by the class which he seeks to enter.

GENERAL PLAN OF INSTRUCTION

As the student upon entrance must bring from the collegiate training a good knowledge of physics, general chemistry, and general biology, these subjects do not form a part of the curriculum of this medical school. The study of these sciences is justly considered an essential part of a thorough medical education, but it can be pursued to greater advantage during the period of preliminary training in the college or university than in a medical school. By the arrangement here adopted the required period of study for the degree of Doctor of Medicine should be counted as five to six years, if, as is customary in many medical schools, especially in Europe, the study of physics, general chemistry, and general biology be regarded as a part of the medical curriculum.

The first two years of the medical course are devoted mainly to the fundamental medical sciences, the larger part of the time being spent in practical work in the Laboratories. In the latter two years medicine, surgery, obstetrics, and the various specialties are studied in the Dispensary, the wards of the Hospital, and the Clinical Laboratories.

The principal studies of the first year are human anatomy, histology, microscopic anatomy, embryology, physiology, and physiological chemistry.

The study of anatomy and of physiology is continued in the second year. Throughout the second year general pathology, pathological anatomy and histology, pharmacology and toxicology are studied. A practical course in bacteriology, with the chief emphasis upon its hygienic and medical bearings, is given during three months of this year.

Upon the basis of thorough training in the fundamental medical sciences, pursued during the first two years of the course, the student should now be well fitted to undertake the study of practical medicine and surgery.

During the third year the general principles of medicine, surgery and obstetrics are studied, and clinical instruction in medicine and surgery is given. A course in dietetics and practical therapeutics is given. The study of certain special branches of medicine is also begun. Instruction is given in clinical neurology and in the use of the opthalmoscope. Leading features of the work of this year are the courses in the Clinical Laboratories and practical work in the Dispensary.

During the fourth year the practical study of medicine, surgery, and obstetrics is continued, and instruction is given in gynecology and the various special branches of medicine and surgery, viz: dermatology, diseases of children, genito-urinary diseases, laryngology and rhinology, ophthalmology and otology, and psychiatry. In this year the students serve as clinical clerks and surgical dressers in the wards of the Hospital and are in daily attendance upon special classes in the Dispensary. They also attend cases of labor in the obstetrical wards of the Hospital, and, under proper supervision, in the homes of patients. For the ward and dispensary work the class is divided into small groups. The arrangement of the work during the third and fourth years is such that each student is given excellent opportunities for the direct personal examination of patients in the Dispensary and Hospital.

Instruction in hygiene, forensic medicine, medical zoölogy, and medical history is provided during the course.

Work in the dissecting room, in the laboratory, and at the bedside, demonstrations, clinics, lectures, and recitations are the main features of the methods of instruction. Purely didactic lectures occupy a subsidiary position, as compared with instruction by recitations and demonstrations and especially by practical work in the various laboratories, in the Hospital wards, and in the Dispensary. In consequence of the high standards of admission and attainment, the classes are not likely to be excessively large, and abundant opportunity is therefore afforded for practical work for each student and for personal contact between teacher and student.

LABORATORIES

The Physiological Laboratory is in the Biological Building of the University, which is a large four-story structure well arranged and equipped for its special purposes.

The Anatomical and the Pharmacological Laboratories occupy the Women's Fund Memorial Building, which was erected in 1894 upon a large plot of ground owned by the University opposite the Hospital. This is a commodious building, three stories in height, constructed for the accommodation of the various anatomical laboratories. In the basement is a cold-storage plant for the preservation of bodies for dissection. The first story is for the present occupied by the department of pharmacology, which is well supplied with the necessary collections and apparatus for the practical and experimental study of this subject. The two upper stories are fitted with all the necessary apparatus for instruction and research in embryology, histology, and gross anatomy. Instead of one large dissecting room, there are a number of smaller dissecting rooms of varying size, which thus afford the best opportunity for the work for which they are intended. There is a good collection of anatomical preparations, models, casts, and diagrams available for the use of students. This building contains rooms for photomicrography and for dark-room projections.

The Pathological Laboratory is a four-story building on the grounds of the Hospital. This building contains the morgue and the autopsy theatre, the pathological museum, and rooms for instruction and research in bacteriology, pathological anatomy and histology, and experimental pathology. The class rooms are commodious and well lighted. There is ample supply of material for study in all departments of pathology and in bacteriology.

The Laboratory of Physiological Chemistry occupies for the present the third story of the Pathological Building.

The Clinical Laboratory occupies two stories added in 1896 to one of the Hospital buildings. The funds contributed for this were a generous gift to the Hospital. This laboratory contains two large class rooms for students of the third and the fourth years, respectively, and several smaller rooms for special departments of practical medicine and surgery and for the director, assistants, and special workers. Here the students are taught during the last two years of the course the physical, chemical, microscopical, and bacteriological methods of studying the blood, secretions, parasites, and morbid products with direct relation to their bearings on diagnosis and other practical aspects of clinical medicine and surgery.

A large laboratory building is now in process of erection upon the grounds of the Medical School adjacent to the Hospital. It is expected that this will be ready for occupation in the autumn. When completed, it will accommodate the laboratories of physiology, of physiological chemistry and of pharmacology.

CLINICAL OPPORTUNITIES

Abundant and varied clinical material is afforded by the Johns Hopkins Hospital and Dispensary. The Medical Department of the University is in close connection with this large and well-equipped Hospital and derives signal advantages from the resources of this institution. Professors in the Medical School, with their assistants, have entire charge of the practice in the Hospital and the Dispensary, which furnish ample material for clinical instruction in the various branches of medicine and surgery, including the specialties. The lying-in department of the Hospital, which was opened in 1896, is in successful operation. This, together with the out-patient obstetrical service, supplies good opportunities for practical training in obstetrics. The clinical amphitheatre and operating rooms are in the Hospital buildings.

Especially advantageous for thorough clinical training are the arrangements by which the students, divided into groups, engage in practical work in the Dispensary, and throughout the fourth year serve as clinical clerks and surgical dressers in the wards of the Hospital, as will be explained subsequently.

Practical instruction in mental diseases is given by the Associate in Neuro-Pathology in the City Asylum at Bay View.

MICROSCOPES

The character of the practical work requires that each student, during each year of the course, shall be supplied with a microscope, and every student is recommended to purchase one. Each student who does not possess a microscope is furnished at a yearly rental with one, which he retains for his own use throughout the academic year.

LIBRARIES

In the main building of the Hospital is a medical library with full sets of medical periodicals. The various special laboratories possess also appropriate libraries. These, as well as the libraries and reading room at the University and those of the Peabody Institute, are available without charge for the use of medical students.

MEDICAL SOCIETIES

Three associations, the Hospital Medical Society, the Historical Club, and the Journal Club meet in the Assembly Room of the Hospital, one each Monday evening throughout the academic year, and are open to students.

PUBLICATIONS

The Bulletin of the Johns Hopkins Hospital, issued monthly, and now in the ninth year of its publication, contains articles by those connected with the Medical School and Hospital and the proceedings of the Hospital Societies. The Johns Hopkins Hospital Reports, of which seven volumes have been issued, contain the larger monographs and results of researches in the Hospital and the Pathological and Clinical Laboratories.

COURSES OF INSTRUCTION

The following statements are designed to exhibit the opportunities and the character of the instruction and practical work in each department.

ANATOMY

The work in the department of Anatomy is in charge of Dr. Franklin P. Mall, Professor of Anatomy, with the coöperation of Dr. Lewellys F. Barker, Associate Professor of Anatomy, Dr. Ross G. Harrison, Associate in Anatomy, Dr. J. Williams Lord, Instructor in Anatomy, and Dr. Charles R. Bardeen, Assistant in Anatomy. Instruction in surgical anatomy is given by Dr. John M. T. Finney, Associate Professor of Surgery.

Courses of instruction are provided in the various anatomical sciences—systematic human anatomy, histology, microscopic anatomy and embryology—and opportunities are afforded for advanced work and original investigation in these sciences. It is possible for the student to devote about two-thirds of his time during the first year and one-third during the second to the study of anatomy.

The courses in histology and microscopic anatomy are completed during the first year. That in systematic anatomy begins in October of the first year with osteology, and continues with dissections during the first and second years. In addition to the required courses in histology and gross and microscopic human anatomy, there are elective courses in which students with unusual preliminary training or special talent may, by arrangement with the instructors, do more advanced work along lines which particularly interest them or which will prepare them for some prospective subsequent study. Physicians and special students with the requisite training may be admitted by special arrangement with the instructors to some of the courses and to undertake advanced work and original research.

I. Osteology. This course begins on the first of October and consists of laboratory work, demonstrations, recitations, and lectures. A complete set of bones is loaned to each two students. The individual bones of the human skeleton are studied, and the student is encouraged to make accurate drawings of them. Facts from comparative anatomy and embryology are brought to bear on the subject, where these are calculated to be of assistance to the student.

II. Systematic Anatomy of the Human Body. Practical human anatomy is taught in the dissecting rooms as soon as cool weather sets in. The laboratory is furnished with a cold storage apparatus, which makes it possible to keep on hand a supply of excellent anatomical material. A valuable collection of models and charts is available for the use of students. The work begins with the dissection of either the upper or the lower extremity, and when these two parts have been finished the dissection of the head, neck, and thorax is taken up. The time usually required for these courses of dissection, the student working every afternoon, is eight weeks for the upper extremity and ten weeks for each of the two remaining parts.

The work of each student is conducted independently, and is continuous until he has completed the dissection of the whole human body. The work is carefully supervised, and especial emphasis is laid upon care, thoroughness, systematic study, and tabulation of the parts dissected. Students, individually or in small groups, are thoroughly examined upon a part when its dissection has been completed.

After completing a dissection of the entire body the student may dissect a second time any of the parts, or may make special dissections or preparations, provided there is available anatomical material. In case the dissection of the entire body has been completed satisfactorily in every respect, special dissection may be done in lieu of the practical examination in anatomy.

III. Histology and Histogenesis. This course begins October first and continues every day for six weeks. It consists in the main of practical work in the laboratory supplemented by a series of morning lectures with recitations, demonstrations, and exhibition of charts and models. The different simple tissues are studied by a variety of methods, considerable stress being laid upon the examination of fresh tissues and of frozen sections, unstained as well as stained. Comparisons are made with developing tissues and with those of lower forms of living beings.

IV. Macroscopic Organology. This course begins October first and continues for twelve weeks. Its aim is to lead the student gradually from the appearances noted in general dissection up to the point where to make further progress in the study of the tissues the naked eye becomes insufficient and the microscope must be employed. It is transitional, therefore, between gross systematic anatomy, as studied in the dissecting room, and microscopic anatomy. The attempt is made to train the student in close scientific observation and objective description by attention to such appearances as size, form, color, consistence, weight, etc. Processes of dissection with delicate instruments, dissociation, maceration, corrosion, putrefaction, injection, digestion, etc., are used. The practical work is accompanied by lectures and demonstrations.

V. Microscopic Organology. This course begins November fifteenth and continues for ten weeks. The student, having gone as far into the architecture of the organs as the unaided eye will take him, uses first low powers and later high powers of the microscope in order to determine the mode in which the elementary tissues are united to form organs. He is taught to search for and detect morphological units between the organs and the elementary tissues. Where of advantage tissues from the embryo and from animals other than man are introduced. The organs of the circulatory, haemopoietic, digestive, respiratory, uropoietic, and genital systems are successively studied. The subsequent work in physiology and pathology as well as the standpoint of modern anatomy are kept in view in the study of this subject.

During three forenoons of the week the members of the class work immediately under direction. The laboratory is, however, open throughout the week, so that students may do extra work without direct instruction. Informal lectures, illustrated by charts, models, dark-room projections, and demonstrations, accompany the practical work.

VI. Neurology. This course is given during February and March. The work consists in the main of practical exercises in the laboratory and begins with the study of the sense organs. The skin, the nose, the eye, and the ear are successively studied by dissections and by the microscope. The macroscopic morphology of the central organs is next considered, after which the student examines and draws a series of sections stained by Weigert's methods taken at various levels through the spinal cord, the medulla oblongata, pons, cerebellum, mid-brain and cerebral hemispheres. The various groups of neurones concerned in centripetal and centrifugal conduction are separately considered. An attempt is made to make clear, as far as they are known, the anatomical mechanisms underlying the various reflex, instinctive, and voluntary activities. In addition to the methods of Weigert and Golgi, those of Marchi, Flechsig, and Nissl are utilized in various stages of the course. The practical work is accompanied by a series of illustrated lectures.

VII. Technique of Histology and Microscopic Anatomy. In this special course opportunity is afforded to those who wish to extend their knowledge of methods beyond the technical procedures learned in connection with the preceding courses. The student is taught the best methods of examinations of tissues in the natural state, and of preserving material for later study. Methods of dissociation, corrosion, injection, embedding, staining, sectioning, reconstruction, etc., may be learned. Especial training in particular departments, as in the modern methods of neurological investigation, is available for those prepared to engage in such work.

VIII. Anatomy as applied to Surgery. This course is given by Dr. Finney in the third year during the winter months. The different regions of the body are successively considered in their topographical relations with especial reference to the surgical operations which may be performed upon them. The course is illustrated by specimens and by special dissections.

IX. Special Course in Histology for Physicians. A special preliminary course in Histology is given during April for those who may not be adequately prepared to follow the laboratory courses in Pathology, Bacteriology, and Clinical Microscopy provided during May and June for physicians (see Part II, p. 83).

X. Advanced Work and Original Investigation. The laboratory has been especially equipped for the work of investigation as well as for teaching, and the modern machines and apparatus likely to be needed have been provided. Rooms and apparatus for animal experimentation, mechanisms of convenience for drawing and reconstruction, projection apparatus, photomicrographic outfit, and apparatus for work at low temperatures are at hand. A large collection of serial sections through human and animal embryos of different ages is available in connection with research in human embryology, and sets of serial sections, coronal, horizontal and sagittal, through the human rhombencephalon and cerebrum may be used by investigators in neurology. Facilities are afforded for the artistic illustration and publication of the results of researches leading to discoveries of importance. Every encouragement is given to suitably trained and endowed individuals who desire to undertake original investigation either under direction or independently.

PHYSIOLOGY

The instruction in Physiology is under the charge of Dr. William H. Howell, Professor of Physiology, assisted by Dr. George P. Dreyer, Associate in Physiology. The course extends from January 1 of the first year to January 1 of the second year.

The work consists of lectures, experimental work in the laboratory, demonstrations, and recitations. The lectures are fully illustrated by experiments and demonstrations given in the lecture-room. Weekly recitations are held upon the subject matter covered by the lectures.

The laboratory course is arranged to occupy six hours a week for about twelve weeks. In this course the students are required to perform the simpler experiments upon muscle, nerve, circulation, and vision, making use of the various graphic methods employed in physiology. The work is intended to give an idea of the methods used in experimental physiology, and to furnish also that basis of actual acquaintance with facts which is necessary for intelligent reading.

In addition to the foregoing exercises, which comprise the required work, students are given opportunities to participate in the more advanced courses and intended primarily as graduate work. These courses are as follows: A physiological journal club meets weekly to discuss the recent literature in animal physiology and histology. A physiological seminary meets weekly during the year. The object of the seminary work is to study carefully by means of lectures or readings some special part of physiology, the topics chosen varying each year. An advanced course of laboratory work is arranged,—intended to teach the methods of physiological demonstration and research. This course is under the control of the professor of physiology, and is not limited as to time or amount of work, with the exception that assistance from the professor must be arranged for by definite engagements. It is designed for those who expect to become teachers or investigators in physiology, pathology, or pharmacology, and the number permitted to take it is necessarily limited. For purposes of research the laboratory is well equipped.

PHYSIOLOGICAL CHEMISTRY

Instruction in Physiological Chemistry is under the charge of Dr. John J. Abel, Professor of Pharmacology, and of Dr. Thomas B. Aldrich, Associate in Physiological Chemistry, with the aid of Dr. Walter Jones, Assistant in Physiological Chemistry.

Instruction in this branch is given by laboratory work, lectures, demonstrations, and conferences of a less formal character. The work in the laboratory begins the first of March and continues, with daily exercises, until the end of the first year of the course.

I. Laboratory Work. (*a*) A short preliminary course on the chemistry of various substances, such as proteids, which are usually not familiar to the student of pure chemistry but which should be understood in order that he may intelligently execute the work that follows. Here also an acquaintance is made with such processes as dialysis, centrifugation, and salting which are more or less confined to laboratories of physiological chemistry.

(*b*) A course of qualitative analysis in which some examination is made of nearly every tissue and fluid of the body. Blood, liver, milk (colostrum), muscle, gastric juice, adipose tissue, bone and bile receive special attention, and whenever material is available a study is made of pathological fluids and concretions. The chemical constituents of these tissues and fluids are isolated and identified, and such of their chemical reactions shown as throw light on the possible origin or disappearance of the compounds in the organism. The object of this course is not only to acquire familiarity with the chemical substances that can be isolated from the animal body, but to gain possession of rapid and precise methods of physiological chemical manipulation so useful in the subsequent study of practical medicine.

(*c*) A study of those physiological chemical processes which can be closely imitated outside of the body, as the action of enzymes, salivary, pancreatic and gastric digestion.

(*d*) Class experiments. Demonstrations by the instructor in which the entire class usually takes part. Comparative examination of blood spectra with the microspectroscope, polarimetric measurements, experiments upon animals, etc.

(*e*) Quantitative analysis. Determination of normal and pathological constituents of urine; analysis of milk, gastric juice, stomach-washings, air, water, and foods.

(*f*) Examination of the faeces with special reference to putrefactive processes.

II. Informal conferences at which the laboratory work is discussed and the progress and needs of the student are considered. Here also the late literature which bears directly upon the work is reviewed.

III. Lectures. A brief survey of the entire province of physiological chemistry. Emphasis is given to that part of the subject which for obvious reasons must be omitted from a laboratory course. Various theories are discussed and structural relations also receive attention whenever they promise to throw light on animal metabolism.

TOXICOLOGY, PHARMACOLOGY, AND PRACTICAL THERAPEUTICS

The instruction in Pharmacology and Toxicology is under the direction of Dr. John J. Abel, Professor of Pharmacology, aided by Dr. Reid Hunt, Associate in Pharmacology, and Dr. Albert C. Crawford, Assistant in Pharmacology. Dr. Walter Jones, Assistant in Physiological Chemistry and Toxicology, also assists in teaching Toxicology. Mr. J. Lee Walz, Ph. G., Assistant in

Pharmacy, and Pharmacist to the Johns Hopkins Hospital, gives instruction in Pharmacy. Instruction in these branches is given mainly in the second year of the course by illustrated lectures and laboratory work two afternoons a week from the opening of the session in October until the middle of March, and in addition one recitation a week is held. Dr. Henry B. Jacobs, Instructor in Medicine, conducts a course in Practical Therapeutics in the third year.

Toxicology

The work in this subject covers eight weeks, the actual work of detecting poisons being preceded by a short course in experimentation on anæsthetized animals in which the phenomena and general principles of intoxications are set forth. This preliminary course, partly physiological and partly chemical in character, is also of such a nature as to constitute the best introduction to the subject of Pharmacology. Some of the points illustrated in this preliminary course are the rapidity of dispersion of drugs throughout the body, the paths of elimination for drugs, the storage of drugs in the various tissues and organs, the varied symptoms of poisoning, changes in the blood, the grosser lesions produced by powerful poisons, and the chemical changes effected in the drug itself in its passage through the body. The general principles of toxicological analysis are then illustrated by actual practice in the laboratory, the following outline showing the ground which is usually covered:

(*a*) Search for volatile substances by distillation with steam under various conditions, and by analytical methods applicable to the detection of minute quantities of this class of poisons.

(*b*) Search for alkaloids and glucosides by modifications of the methods of Dragendorff, Brouardel, Kippenberger, and others. Mixtures of alkaloidal poisons and foods are subjected to some process of extraction suitable to the case.

(*c*) Search for metallic poisons and non-volatile acids. Several of the best methods for the destruction of organic matter are illustrated before the class, and material for individual study is thus prepared. Arsenic, antimony, lead, and mercury are considered in detail, and the student is required to give satisfactory proof of the presence of these poisons in materials which are submitted to him.

(*d*) A study of blood stains, and the separation of blood from rust spots, etc. A spectroscopic and chemical study is made of the various haemoglobin derivatives, as methaemoglobin, haematin, reduced haematin, haematoporphyrin, etc.

(*e*) A study of the changes in the urine induced by drugs.

Pharmacology

The remainder of the year is devoted to the study of the pharmacological action of drugs. The course in Pharmacology, like that in Toxicology is largely a laboratory course, students working in sections of four or a less number according to the nature of the experiment.

The practical work in experimentation on anæsthetized animals includes such topics as the action of drugs on the heart, vessels and vasomotor apparatus, on the respiratory apparatus, the eye, brain and spinal cord, voluntary muscles, kidneys, salivary and sweat glands, intestine, etc. The chemical side of Pharmacology also receives due attention. The fate of drugs in the organism, their influence on the metabolism of the body and the manner of their excretion are fully treated in lectures and illustrated wherever possible.

Pharmacy

Pharmacy is treated by Mr. J. L. Walz, Ph. G., in a course of demonstrations and lectures. Weights and measures, incompatibles, special points relating to prescriptions and the officinal pharmacopœial preparations are fully dealt with. The more important preparations are made before the class.

Practical Therapeutics

In the third year on two afternoons of the week a course in Practical Therapeutics, consisting of lectures and demonstrations, is given by Dr. Henry B. Jacobs. Use is made for purposes of illustration of cases from the wards of the Hospital.

The course comprises the study of a number of the more common and useful drugs, their dosage, administration and effects, methods of prescription writing and illustrative formulæ, demonstrations of practical therapeutic measures, the use of hydrotherapy, the preparation of simple and useful forms of diet, the care of patients considered from the nursing point of view, the treatment of various emergencies and of special diseases by climate, rest and other practical procedures.

The clinical work of the third and fourth years affords abundant opportunities for further training in practical therapeutics.

Pathology and Bacteriology

The instruction in Pathology and Bacteriology is under the charge of Dr. William H. Welch, Professor of Pathology, with the coöperation of Dr. Simon Flexner, Associate Professor of Pathology, Dr. Louis E. Livingood, Associate in Pathology, and Dr. Norman MacL. Harris, Assistant in Bacteriology.

General and Special Pathological Anatomy and Histology, General Pathology, and Bacteriology are taught by laboratory work, demonstrations, recitations, and lectures. These courses continue throughout the second year. The laboratory work occupies three half-days a week during the year.

I. The Conduct of Autopsies. These are made in the Pathological Building and are witnessed by the students of the second, third, and fourth years. Students of the third and fourth year classes are permitted to assist at post-mortem examinations and are instructed in the methods of making such examinations and of recording in proper protocols the results.

II. Demonstrations in Gross Morbid Anatomy. The macroscopic changes in organs and tissues are taught at the autopsy table and by demonstrations of fresh specimens derived from autopsies and from material sent to the laboratory. Preserved specimens from the Museum are also exhibited. Two hours are set aside on one day of the week, at which the gross morbid specimens, collected during the week, are demonstrated. This course is for students of the second, third, and fourth years.

III. Bacteriology. This course, which precedes that in Pathological Histology, begins the first of October and continues for three months, occupying three half-days a week. It is a practical laboratory course in which the students become familiar with the preparation of culture media, the principles of sterilization and disinfection, the methods of cultivating, staining, and studying bacteria, the biological examination of air, water, and soil, and the important species of known pathogenic micro-organisms. The hygienic, as well as the pathological, relations of bacteriology are considered.

IV. Lectures on Infection and Immunity. During the months of practical work in bacteriology, weekly lectures are given devoted mainly to the consideration of subjects pertaining to Infection and Immunity.

V. General Pathology. This subject is covered as far as practicable by demonstrations, experiments, and laboratory work. Aspects of the subject not susceptible of this demonstrative treatment are taken up in lectures and recitations.

VI. Pathological Histology and Pathological Anatomy. Pathological Histology is taught as a part of Pathological Anatomy, the description and demonstration of gross lesions being followed by microscopical examination of the same lesions. Much use is made of frozen sections of fresh organs. The course begins with the study of inflammation, and in regular order the pathological anatomy and histology of the different tissues and organs of the body are taken up. Microscopical sections are given to be stained, mounted, and carefully studied and drawn. Instruction in the technique of making pathological examinations, including the methods of pathological histology, and practice in pathological diagnosis are afforded.

VII. Recitations. Throughout the year are held weekly recitations which cover the ground gone over by the students in their laboratory work, as well as subjects treated in lectures and those reserved more especially for text-book study.

VIII. Lectures on Special Topics in Pathology. Didactic and demonstrative lectures are given upon subjects which can not be satisfactorily treated in the laboratory.

IX. Courses in Pathology and in Bacteriology for Physicians. During the months of May and June special laboratory courses in these subjects are provided for physicians (see Part II, p. 83).

X. Advanced Work and Special Research. Opportunity is afforded to those suitably trained to pursue advanced work and special research in Pathological Anatomy and Histology, Experimental Pathology, and Bacteriology. For these purposes the Pathological Laboratory is well equipped with the necessary apparatus and material.

MEDICINE (INCLUDING CLINICAL MICROSCOPY)

The instruction in this department is under the charge of Dr. William Osler, Professor of Medicine, with whom are associated Dr. William S. Thayer, Associate Professor of Medicine, Dr. Thomas B. Futcher, Associate in Medicine, Drs. Frank R. Smith and Henry Barton Jacobs, Instructors in Medicine, and Dr. Jesse W. Lazear, Assistant in Clinical Microscopy.

The teaching is in the Dispensary, in the Clinical Laboratory, and in the Wards. In place of systematic didactic teaching there has been introduced a plan of practical instruction by which the student is brought directly in contact with the patients, and taught from the outset how to recognize and treat disease as it occurs in nature, not in books.

The work of the Third Year is as follows:

I. Physical Diagnosis. This is in charge of Dr. Thayer with the assistance of Dr. Jacobs. Instruction is given in the topographical anatomy of the viscera, in the taking of histories, in auscultation and percussion and in other routine methods of physical exploration.

The class is divided into four sections in order that the students may have better opportunity for the personal study of the patients. Each student has two hours a week of practical clinical work, while once a week there is a recitation attended by the entire class. The course is made as practical as may be.

II. General Symptomatology of Disease. At twelve o'clock on Tuesdays, Thursdays and Saturdays Dr. Osler meets the students in the class room adjoining the Dispensary. The students in rotation examine selected cases. The teaching consists in (*a*) thorough consideration of the clinical features of the case; (*b*) brief discussion of the symptoms; (*c*) reports by each student upon the cases which he examines and whose further progress he follows either by personal visits outside or, if the patient is admitted to the Hospital, by observation in the wards; (*d*) on the last class day of each month a clinical "round-up," when the student, whose turn it happens to be, reports on the work of the month; (*e*) short papers on definite themes given to the students relating to subjects which come up in the course of the examination of patients. These "five minute" papers on various topics familiarize the student with the literature, and very often prove most instructive to the class and indeed to the teachers.

The class is taken frequently to the autopsy room and points in medical anatomy are demonstrated, questions on this subject also being set throughout the session.

III. Work in Dispensary. After the completion of the third year the students have an opportunity to assist in the dispensary. Dr. Frank Smith arranges the rotation of the groups and gives instruction in the method of taking histories and making examinations.

IV. Clinical Laboratory. (*a*) Dr. Futcher with Dr. Lazear conducts throughout the session, during two afternoons of the week, a class in Microscopical and Chemical Diagnosis. The course is a systematic one in which the students are trained in the methods of examining blood, sputum, gastric contents, urine, faeces, etc. The work is made as thoroughly practical as possible, the students being required to apply the methods and technique taught in the laboratory in the study of special cases assigned to them in the Hospital wards.

(*b*) One of the large rooms of the Clinical Laboratory is devoted exclusively to the third year students. Each student has his own place in the laboratory with locker, microscope, reagents, etc., and, the laboratory being open all day, he is encouraged to work independently during any spare time he may have.

V. Clinics. On Wednesdays at 12 Dr. Osler meets the third and fourth year students in the clinical amphitheatre of the Hospital. Chiefly acute diseases are shown and discussed. Week by week, throughout the session, the progress of the cases shown is reported, and in the more important affections, as typhoid fever and pneumonia, an attempt is made to present in orderly sequence the entire experience of the session. Thus in 1896–97 twenty-five cases, and in 1897–98 twenty-seven cases, of pneumonia were discussed before the class, and the main features emphasized. In this way each student during the third and fourth years gets a valuable body of clinical experience.

VI. Recitations. These as already mentioned are held in connection with preceding courses.

The work of the Fourth Year is as follows:

The students are divided into four equal groups, each group serving for two months successively in the medical, surgical, obstetrical, and gynecological divisions of the Hospital and in attendance upon the special departments of the Dispensary.

I. Ward Work. Of the four groups into which the class is divided the members of each serve for two months as clinical clerks in the medical wards of the Hospital. A certain number of beds are assigned to each student. He takes the history of new cases, keeps the notes, and, under the guidance and direction of the house-physician, makes the necessary examinations. The clinical clerks have access to the wards from 8 a. m. to 6 p. m. They accompany Dr. Osler in the ward visits, read the histories of the new cases, are questioned as to the results of their examinations, and receive special instruction. In this personal contact of student with patient clinical instruction finds its rational development.

II. Ward Classes. At 9 a. m. the ward visit is made on Tuesdays, Thursdays and Saturdays by Dr. Osler, and at the same hour on Mondays, Wednesdays and Fridays by Dr. Thayer. The members of the class are taught the methods of examination, the progress of the cases is followed, and instruction is given in the methods of treatment.

III. Clinics. At 12 o'clock on Wednesdays the fourth year students attend the general medical clinic in the amphitheatre. Special cases are considered, particularly of the acute diseases as already mentioned. The clinical clerks read the histories of the new cases brought before the class and report on the progress of cases previously shown. The deaths of the week are discussed, the autopsy report read, and the specimens shown. The more important acute diseases are dealt with systematically.

IV. Recitations. At 11 a. m. on Thursdays a recitation on an assigned subject is held by Dr. Osler.

V. Clinical Laboratory. A large room of the Clinical Laboratory is devoted exclusively to the fourth year class. Here each student has a place with microscope, reagents, etc., throughout the session, and can engage in any special work.

SURGERY

The instruction in Surgery is in charge of Dr. William S. Halsted, Professor of Surgery, with whom are associated Dr. J. M. T. Finney, Associate Professor of Surgery, Dr. Joseph C. Bloodgood, Associate in Surgery, Dr. Sydney M. Cone, Assistant in Surgical Pathology, Dr. Hugh H. Young, Instructor in Genito-Urinary Diseases, and Dr. Harvey W. Cushing, Assistant in Surgery.

The teaching is in the Dispensary, in the Wards and Operating Rooms of the Hospital, and in the Clinical Laboratory.

The principal work of the third year is in surgical pathology, surgical diagnosis, and the general principles of surgery. It includes:

I. Surgical Pathology. Dr. Cone conducts a course in Surgical Pathology in the class room of the Clinical Laboratory assigned to third-year students. The gross and microscopical appearances of the different stages of repair of wounds under various conditions are studied. Pathological material from the operating rooms is regularly assigned to students for examination. Practice is afforded in the macroscopical and microscopical diagnosis of tumors and in surgical bacteriology.

II. Minor Surgery. This is taught by Dr. Finney in the Dispensary, where the student gains practical experience in diagnosis, in the application of surgical dressings and apparatus and, in general, in the treatment of surgical cases.

III. Operative Surgery. This is taught by Dr. Halsted and an Assistant by means of practical exercises.

IV. Clinics. The students attend a weekly clinic conducted by Dr. Halsted and Dr. Finney.

V. Recitations. Weekly recitations upon assigned subjects are held by Dr. Halsted.

The work of the fourth year consists of:

I. Ward Work. Each of the four groups, into which the students of the fourth year are divided, serves for two months in the surgical wards of the Hospital. During this service they take the histories of cases and act as surgical dressers. They witness and assist at operations and have practice in operative surgery. The ward work occupies the mornings until twelve o'clock.

II. Ward Classes. The students make the morning visits to the wards with Dr. Halsted or Dr. Cushing, where they receive bedside instruction. They thus have daily opportunities to become familiar with the diagnosis, management and progress of surgical cases.

III. Clinics. A weekly clinic, occupying three hours, is held by Drs. Halsted and Finney. Dr. Halsted occupies the first hour in the presentation of cases, which the students are permitted to examine and, in many instances, are expected to report upon. This exercise is directly followed by operations by Dr. Finney.

IV. Private Operating Room. To each group of fourth year students the privileges of the private operating room are extended for two months. Operations take place, as a rule, five days a week in this room.

V. Surgical Anatomy and Operations on the Cadaver. A course in anatomy as applied to surgery and in operative surgery on the cadaver is given by Dr. Finney (see page 40).

VI. Surgical Pathology. The study of this subject with opportunities for the microscopical and bacteriological examination of surgical material is continued in the fourth year.

VII. Recitations. A weekly recitation is held by Dr. Halsted or Dr. Bloodgood.

Practical exercises in operative surgery are continued in the fourth year.

OBSTETRICS

The instruction in Obstetrics is given in the third and fourth years by Dr. J. Whitridge Williams, Associate Professor of Obstetrics, assisted in the clinical work by Dr. George W. Dobbin, Assistant in Obstetrics, as follows:

In the third year five to seven hours a week are devoted to the teaching of Obstetrics. The time is divided between:

I. Didactic Lectures.

II. Laboratory instruction in the anatomy, histology, and pathology of the female generative organs. from an obstetrical point of view, and the pathology of the various diseases of pregnancy, labor, and the puerperal state, as well as the various diseases of bone, which play so important a part in the production of deformed pelves.

III. Demonstrations of the various operative procedures upon the manikin, with practical exercises by the students.

IV. Recitations.

In the fourth year, the greater part of the work is practical.

I. Ward Work and Ward Classes. Each of the four groups of students into which the fourth-year class is divided serves for two months in the lying-in wards of the Hospital. Here they meet twice a week for instruction in the examination of pregnant women, especial attention being given to obstetrical palpation and pelvimetry. Two students are called to each case of ordinary labor, and the entire section to unusual and operative cases.

II. Out-patient Obstetrical Service. The students are also required to attend, under proper supervision, a definite number of poor women at their own homes, and during this period are expected to occupy at night rooms provided for the purpose in the neighborhood of the Hospital so as to be always within call.

III. Conferences and Recitations. There are weekly meetings of the class for clinical conference, in which cases which have been observed by the students are discussed and criticised and practical lessons drawn from them. At the same time recitations are held, which are accompanied by illustrative demonstrations by the students upon the manikin and with the microscope.

IV. Teratology. In the early part of the year, there is a short course of lectures upon Teratology.

GYNECOLOGY

The instruction in Gynecology is under the charge of Dr. Howard A. Kelly, Professor of Gynecology, aided by Dr. William W. Russell, Associate in Gynecology, by Dr. Thomas S. Cullen, Associate in Gynecology, and by the Resident Gynecologist of the Johns Hopkins Hospital.

The instruction is given in the fourth year of the course. The members of each of the four groups into which the class is divided serve for two months in the gynecological wards of the Hospital, where they are brought into direct contact with patients, and have opportunity to acquire experience in the examination and management of gynecological cases. The main features of the instruction consist in:

I. Gynecological Diagnosis. Dr. Russell conducts a touch course once a week, the examinations being made under ether. The students by practical experience become familiar with the examination of normal and diseased pelvic organs.

II. Ward Work and Ward Classes. The students accompany the resident gynecologist upon his rounds through the wards, and receive bedside instruction. They take the histories of patients, follow the cases under the direction of the resident gynecologist, are present at the operations and watch the after-care.

III. Gynecological Operations. Operations are performed four days every week by Dr. Kelly and by Dr. Russell, demonstrating all the important gynecological conditions both major and minor. The field is peculiarly rich in abdominal surgery; particular attention is paid to plastic surgery and to urinary affections, vesical, ureteral and renal. The methods of catheterization of the ureters and cystoscopy are taught.

IV. Gynecological Pathology. This is taught in a course of practical laboratory work and demonstrations conducted on one afternoon of the week by Dr. Cullen. Abundant fresh material is afforded by the operating room, and use is made of the large collection of preserved morbid specimens. Special attention is given to diagnoses from uterine scrapings and small portions of excised tissue.

V. Lectures. Dr. Kelly and the Associates give weekly lectures upon the Principles of Gynecology, and upon selected topics.

VI. Recitations. Once a week a recitation is held upon an assigned subject. These afford opportunity to test the advancement of the student, and for informal conferences.

The recitations, lectures, and laboratory course in Gynecological Pathology are attended by the entire class; the other courses for two months by each of the sections.

SPECIAL DEPARTMENTS OF PRACTICAL MEDICINE AND SURGERY

Instruction in these various special departments is given partly in the third, but mainly in the fourth year. For the Ward and Dispensary work the fourth-year class, as already stated, is divided into four sections so arranged that each section in the course of the academic year has in rotation two months of daily service in the wards of each of the four main divisions, Medical, Surgical, Obstetrical, and Gynecological, of the Hospital, and in addition two months of daily dispensary work in each of the special departments, viz: Dermatology, Diseases of Children, Genito-Urinary Diseases, Gynecology, Laryngology and Rhinology, and Ophthalmology and Otology. The course in Diseases of the Nervous System and a course of practical training in the use of the Ophthalmoscope fall in the third year.

The students perform their work in the Hospital wards in the morning, in General Medicine and Obstetrics from 8.30 to 10.30, and in General Surgery and Gynecology from 9 to 12. The Dispensary classes are in the morning from 10.30 to 12 and in the afternoon from 2 to 3.30.

At 12 and at 3.30 the entire class attends a daily clinic, lecture, or recitation in Medicine, Surgery, Obstetrics, or one of the special branches.

DERMATOLOGY

The instruction in this department is in charge of Dr. J. Williams Lord and Dr. T. Caspar Gilchrist, Clinical Professors of Dermatology, and consists of:

I. Weekly systematic Lectures and Demonstrations of Cases, combined with Recitations, for the whole class throughout the fourth year. Cutaneous histology, pathology, and bacteriology, based upon the description and study of microscopical specimens, are important features of the course.

II. Daily Work in the Dispensary for two months for each section of students in the fourth year. Here the students, under proper supervision, gain practical experience in the personal examination, diagnosis and treatment of cutaneous diseases.

In this, as in other departments, opportunities are afforded to those who have the time and requisite training for more extended scientific and practical study.

DISEASES OF CHILDREN

The instruction is in charge of Dr. William D. Booker, Clinical Professor of Pediatrics, and consists of:

I. A weekly Clinic, Lecture or Recitation for the entire fourth year class. Special attention is given to nursery hygiene; infant-feeding; digestive disorders of infants; growth and development, and physiological and anatomical peculiarities of infancy and childhood; manifestations of diseases as peculiar to children.

II. Daily Work in the Dispensary for two months for each section. Students are required to act as clinical clerks, and to discuss the diagnosis and treatment of patients assigned to them. Cases of special interest are presented to all the students of the section for examination.

III. Work in the Clinical Laboratory for Diseases of Children, such as: microscopical examination of the fæces of infants, of ulcerations and patches in the mouth of children, and of sections of anatomical lesions in some of the more important diseases of childhood.

DISEASES OF THE NERVOUS SYSTEM

The instruction under the charge of Dr. Henry M. Thomas, Clinical Professor of Neurology, aided by Dr. Stewart Paton, Assistant in Clinical Neurology, is designed to be as practical as possible. It is given during the third year, the class for the dispensary work being divided into four sections. The students, having already had in previous years thorough courses in the anatomy, physiology, and pathology of the nervous system, are now taught the application of these subjects to the diagnosis and treatment of disease.

The work consists of:

I. Practical Work in the Dispensary. Each section works in the neurological Dispensary daily for two months. Here the students are taught to take careful histories of the patients, and to make thorough and systematic examinations into the condition of the nervous system. They are encouraged to work as independently as possible, and are expected themselves to make the practical application of the methods which they have been taught. The treatment of each patient is discussed with the instructor, and each student is given opportunity to learn the methods of applying electricity in the diagnosis and treatment of the different forms of nervous disease.

II. Weekly Recitation and Clinic. On one day in each week the class is brought together for an hour, during which cases are shown, recitations are held, and informal talks are given. The students are referred to standard text books and other literature, and are questioned on given subjects, and, as far as practicable, cases are used to illustrate the conferences.

GENITO-URINARY DISEASES

The instruction is in charge of Dr. Hugh H. Young, Instructor in Genito-Urinary Diseases and comes in the fourth year.

I. Weekly Lectures, Clinics, Demonstrations, or Recitations attended by the entire fourth-year class. Practical use is made of an abundant clinical material and the various pathological conditions of the genito-urinary tract are illustrated by specimens from the large collection of the Pathological Laboratory.

II. Practical Work in the Dispensary. During two months members from each section of the fourth-year class work as clinical assistants in the Genito-Urinary Department of the Dispensary. The student is taught the pathology, diagnosis and treatment of venereal and other genito-urinary diseases. Practical instruction is given in urethroscopic and cystoscopic examinations. The bacterial infections of the urethra and bladder, as exemplified in the dispensary cases, are closely followed by the student in the laboratory of the department.

LARYNGOLOGY AND RHINOLOGY

The instruction in this department is in charge of Dr. John N. Mackenzie, Clinical Professor of Laryngology and Rhinology.

I. Weekly Lectures, Clinics and Recitations. Throughout the fourth year there is a systematic course of weekly lectures, supplemented by pathological and clinical demonstrations, on the anatomy, the physiology and the common diseases of the upper air tract (nasal and accessory cavities, pharynx, larynx and trachea) and their relations to morbid processes in neighboring and remote parts of the body. In this course special attention is paid to those affections of the air passages which are of most importance to the general practitioner. In connection with these lectures, recitations are held. This course is attended by the entire fourth year class.

II. Daily Work in the Dispensary. Each section of the fourth year class attends for one hour and a half daily during two months the Laryngological and Rhinological Department of the Dispensary where practical instruction is given by Dr. Mackenzie and his assistants. After preliminary drilling in the use of the laryngoscope and other technical procedures and in diagnosis, the student assumes the work of clinical assistant. Pathological material is furnished for microscopic examination and diagnosis.

OPHTHALMOLOGY AND OTOLOGY

The instruction in this department is conducted by Dr. Samuel Theobald, Clinical Professor of Ophthalmology and Otology, and Dr. Robert L. Randolph, Associate in Ophthalmology and Otology.

I. A weekly Lecture or Recitation is given by Dr. Theobald throughout the academic year. These lectures are of a practical character and include a consideration of the surgical anatomy of the eye and ear, the physiology of vision and of hearing, the various methods of examining the eye and the ear, and the more important diseases of these organs.

II. A daily Clinic is given in the Dispensary by Dr. Theobald or Dr. Randolph. Each group of students attends the Ophthalmological and Otological Department of the Dispensary daily for two months. The students are permitted to assist in operations, to examine cases for diagnosis, and to familiarize themselves with the use of the ophthalmoscope, the methods of testing errors of refraction, etc. The small number of students comprising the separate groups makes especially valuable the opportunities thus afforded of acquiring a practical knowledge of the diseases of the eye and ear.

PSYCHIATRY

Instruction in Diseases of the Mind is given by Dr. Henry M. Hurd, Professor of Psychiatry, and Dr. Henry J. Berkley, Associate in Neuro-Pathology. It consists of:—

I. Weekly Lectures, Recitations, or Pathological Demonstrations by Dr. Hurd or Dr. Berkley, from October until the Easter vacation.

II. Visits to the wards of the large City Asylum at Bay View with Dr. Berkley to study the various forms of mental disease, and to attend the clinical lectures and demonstrations of Dr. Berkley.

HYGIENE

Instruction in Hygiene is included in the courses in Pathology and Bacteriology and in Physiological Chemistry. The subject of Diet in Health and Disease is considered by Dr. Jacobs.

In addition, a course of lectures on special topics in Hygiene is given by Dr. A. C. Abbott, Lecturer on Hygiene, in the third year. In this course are considered, among other subjects, the predisposing factors of disease, as regards both the individual and the community, including the influence of age, sex, race, occupation, social occupation, etc.; the relation between public health and the character of the water-supply and the mode of disposal of waste; ventilation, especially in relation to the health and comfort of inmates of hospitals, public institutions, barracks, etc., together with the modern views concerning respiratory products.

FORENSIC MEDICINE

The instruction in this department is given, in the fourth year, by Dr. Robert Fletcher, Lecturer on Forensic Medicine.

The course comprises:—The history of forensic medicine. The death-bed and dying declarations. The duties and rights of the medical witness. The dead body and its examination. Personal identification, including the living person, the dead body, mutilated remains, the skeleton and detached bones; also the examination of stains of blood, semen, etc. The presumption of death and of survivorship. Life insurance. Malpractice. Railway injuries. Sex, including everything in which the female sex may be concerned in matters of jurisprudence. Asphyxia, including hanging, drowning, suffocation, and strangulation. Effects of cold and heat upon the body. Wounds and injuries.

Instruction in toxicology is provided for in a separate course (p. 44), and the jurisprudence of insanity is considered in connection with psychiatry.

MEDICAL ZOOLOGY

Instruction in Medical Zoölogy is given to students of the third and fourth years by Dr. Charles W. Stiles, Lecturer on Medical Zoology, and Zoologist to the U. S. Bureau of Animal Industry. It consists of a course of ten lectures on the animal parasites of man, illustrated with numerous charts and specimens, and supplemented by practical laboratory exercises in examining meat for trichinosis and in the diagnosis of other zoo-parasitic diseases by microscopic examination of faeces. The parasites are studied from the standpoints of zoology, practical medicine, and public hygiene.

HISTORY AND LITERATURE OF MEDICINE

Lectures upon this subject are given by Dr. John S. Billings, Lecturer on the History and Literature of Medicine.

The Historical Club meets once a month throughout the academic year in the Assembly Room of the Hospital. Old and rare or otherwise historically interesting books are exhibited and the history of medical doctrines, of epochs in medicine and of the lives and contributions to knowledge of eminent medical men and other themes pertaining to the history of medicine are considered. Many students avail themselves of the stimulating and educational advantages afforded by the meetings of this Club.

SPECIAL LECTURES

From time to time, as opportunity offers, short courses of special lectures or demonstrations upon selected topics are given either by specially appointed lecturers or by members of the teaching staff.

PROGRAMME OF COURSES

For convenience of reference the arrangement of studies in each of the four years is here given. The general character and details of these courses of instruction have been described in the foregoing pages. Schedules of the hours and other details of the exercises are furnished to the students at the beginning of each session. The right to change or amend the courses of study, if deemed desirable, is reserved.

First Year

Anatomy.

Osteology. Lectures, Recitations, and Laboratory Work, daily until November 15.

Systematic Human Anatomy. Dissections, afternoons daily (also during other available hours).

Macroscopic Organology. Laboratory Work for three months.

Histology and Histogenesis. Laboratory Work, with Demonstrations and Lectures, mornings, three days a week until November 15.

Microscopic Organology. Laboratory Work, with Demonstrations and Lectures, mornings, three days a week, November 15 to February 1.

Neurology. Laboratory Work, with Demonstrations and Lectures, mornings, three days a week, February 1 to March 15.

Microscopic Technique. Special course.

Advanced Work and Review, after March 15.

Physiology. January 1 to June 1.

Lectures, Demonstrations and Recitations, 11 a. m. to 1 p. m., twice weekly until March 15; five days a week after March 15.

Physiological Chemistry.

Laboratory Work, March 1 to June 1, afternoons, five days a week.

Lectures, two or three a week after March 1.

Recitations, once a week after March 1.

Examinations in Histology, Organology, and Physiological Chemistry are held at the end of the first year.

SECOND YEAR

Anatomy.

Dissections, mornings, when not engaged in the Physiological Laboratory (also during other available hours).

Physiology. October 1 to January 1.

Laboratory Work in sections, 9 to 12, twice a week.

Lectures, 12 to 1, three a week.

Bacteriology. October 1 to January 1.

Laboratory Work, 2 to 5, three days a week.

Recitations, once a week.

Lectures on Infection and Immunity, once or twice a week.

Pathology (including Post-Mortem Examinations, General Pathology, Pathological Anatomy and Histology, and Pathological Demonstrations). January 1 to June 1.

Laboratory Work, 2 to 5, three days a week.

Recitations, once a week.

Lectures, once or twice a week.

Post-Mortem Examinations.

Demonstrations of Gross Morbid Specimens, once or twice a week.

Pharmacology and Toxicology. October 1 to March 1.

Laboratory Work, Lectures and Demonstrations, afternoons, three days a week.

Recitations, once a week.

Examinations in Anatomy. Physiology, Bacteriology, Pathology, Pharmacology and Toxicology are held at the end of the second year.

THIRD YEAR

Medicine.

Physical Diagnosis, twice a week for each section.

General Symptomatology of Disease. Dispensary Work with Clinical Instruction, three days a week.

Clinics in the Hospital Amphitheatre, once a week.
Recitations, once a week.

Clinical Microscopy.
Laboratory Work, 3 to 5, three days a week.

Surgery.
Dispensary Work with Clinical Instruction, mornings, three days a week.
Clinics in the Hospital Amphitheatre, 10 to 1, once a week.
Recitations, once a week.
Laboratory Work in Surgical Pathology, 3 to 5, twice a week.
Practical Course in Operative Surgery.
Surgical Anatomy and Operations on the Cadaver, once a week.

Obstetrics.
Recitations, Lectures, or Demonstrations, three times a week.
Laboratory and Manikin Exercises, two hours, twice a week.

Diseases of the Nervous System.
Dispensary, 10.30 to 12, daily. Two months for each section.
Lecture, Clinic or Recitation, once a week.

Pharmacy.
Demonstrations and Lectures, twice a week, for three months.

Practical Therapeutics, including Dietetics.
Lectures, Demonstrations and Conferences, twice a week.

Hygiene.
Lectures and Demonstrations on Special Topics, once a week for two months.

History of Medicine.
Lectures (attended by all students).
Examinations upon the work of the year.

FOURTH YEAR

For the work in the Hospital Wards and the Dispensary the fourth-year class is divided into four sections, each section serving two months as Clinical Clerks or Surgical Dressers in the Medical, Surgical, Gynecological, and Obstetrical Wards of the Hospital, and also two months in the special departments of the Dispensary, viz., the Dermatological, Genito-Urinary, Laryngological and Rhinological, Ophthalmological and Otological, and Pediatric.

Medicine.

Hospital Wards (Ward Work and Ward Classes), 8.30 to 10.30 a. m., daily. Two months service for each section.

Clinics, once a week.

Recitations, once a week.

Surgery.

Hospital Wards and Operating Room (Ward Work and Ward Classes), 9 to 12, daily. Two months service for each section.

Clinics, 10 to 1, once a week.

Recitations, once a week.

Operative Surgery.

Obstetrics.

Hospital Wards, 8.30 to 10.30 a. m., daily. Two months service for each section.

Out-Patient Obstetrical Service. Two months for each section.

Recitations, once a week.

Gynecology.

Hospital Wards and Operating Room, 9 to 12, daily. Two months service for each section.

Ward Classes, twice a week.

Touch Course, once a week.

Lectures, once a week.

Recitations, once a week.

Laboratory Work and Demonstrations in Gynecological Pathology, once a week.

Dermatology.

Dispensary, 2 to 3.30, daily. Two months for each section.

Lectures, Clinics or Recitations, once a week.

Diseases of Children.

Dispensary, 10.30 to 12, daily. Two months for each section.

Lectures, Clinics or Recitations, once a week.

Genito-Urinary Diseases.

Dispensary, 10.30 to 12, daily. Two months for each section.

Lectures, Clinics or Recitations, once a week.

Laryngology and Rhinology.
Dispensary, 2 to 3.30, daily. Two months for each section.
Lectures, Clinics or Recitations, once a week.

Ophthalmology and Otology.
Dispensary, 2 to 3.30, daily. Two months for each section.
Lectures, Clinics or Recitations, once a week.

Psychiatry.
Lectures, once a week.
Clinics at Bay View, once a week.

Forensic Medicine.
Lectures, once a week, for three months.

Medical Zoölogy.
Ten Lectures with Demonstrations and Laboratory Work on Animal Parasites.

Examinations in Medicine, Surgery, Obstetrics, Gynecology and the various Special Departments above enumerated are held at the end of the fourth year.

ANNUAL EXAMINATIONS

At the end of the first year examinations in physiological chemistry, histology, and microscopic anatomy are held.

At the end of the second year examinations in anatomy, physiology, pathology, bacteriology, pharmacology and toxicology are held.

At the end of the third year examinations in medicine, surgery, and obstetrics, so far as these subjects have been pursued, are held.

At the end of the fourth year are the final examinations in medicine, surgery, obstetrics, gynecology, and the special branches in which instruction has been provided during this year.

The examinations are partly written and partly oral, and include practical tests of laboratory and clinical work.

Each student must have done satisfactory work in all the subjects and must pass the examinations at the end of each year, before he can be admitted to the courses of the succeeding year.

Conditions must be absolved at the beginning of the session in October. No student who has any condition unsatisfied at the close of the first condition examination of the academic year shall be permitted to continue with his class without the express authorization of the Faculty.

The estimation of the standing of each student is based both upon the general character of his work and upon the results of examinations.

HOSPITAL APPOINTMENTS

At the close of the academic year in June twelve members of the graduating class are selected for appointment as House Officers in the Johns Hopkins Hospital to serve for one year from September first. The appointments are made upon the basis of the general standing of the students in all the subjects of study during the entire four years' course, combined with considerations of personal fitness. These appointees reside in the Hospital and become officers upon the house staff.

In addition the Faculty is entitled to nominate annually two physicians as assistants upon the house staff of the City Asylum at Bay View.

The appointments of the resident physician, surgeon, gynecologist and obstetrician of the Johns Hopkins Hospital are permanent ones. The first and second resident assistantships under these are annual appointments, subject to renewal.

REQUIREMENTS FOR GRADUATION

The degree of Doctor of Medicine is conferred upon those who, after fulfilling all the requirements for admission, have completed satisfactorily the four years' course of study in this Medical School.

In every instance the candidate must have fulfilled all of the requirements for admission to this Medical School and must have completed, as a regularly matriculated or registered medical student, a four years' course of medical study, equivalent in its standards to that given here, of which the final year must be spent in this Medical School.

The degrees are publicly conferred by the Johns Hopkins University at the Commencement on the second Tuesday of June.

CHARGES FOR TUITION

The charge for tuition is two hundred dollars per annum, payable at the Treasurer's Office, in semi-annual instalments, October 1 and February 1. There are no extra charges for matriculation, for graduation, for instruction in any department, or for laboratory courses, except for materials consumed. To a student who does not possess a microscope, there is an annual charge of five dollars for the use of one, with an additional charge of two dollars for the use of an oil-immersion lens. The student is responsible for damage to the microscope thus rented. A deposit of ten dollars as caution money is required from each student at the time of his enrolment. The caution money is repaid to the student when he leaves, if there are no charges against him. Special charges are made for breakage and for damage to apparatus.

The Treasurer's Office is at the University on North Howard Street. It is open daily from 9 a. m. to 4.15 p. m.

APPENDIX

I

ENDOWMENT

The founder of the Johns Hopkins University, in devoting his large fortune to the establishment of the university and the hospital, had in view the organization of a school of medicine. In his letter addressed to the Trustees of the hospital, dated March 10th, 1873, these significant words occur:

"It will be your especial duty to secure, for the service of the hospital, surgeons and physicians of the highest character and greatest skill. . . . In all your arrangements in relation to this hospital, you will bear constantly in mind that it is my wish and purpose that the institution shall ultimately form a part of the Medical School of the University for which I have made ample provision in my will."

When the University was opened in 1876, arrangements were made for instruction in those sciences, such as physics, chemistry, and biology, which lead up naturally to the professional study of medicine. In 1884 the professorship of pathology was filled and the pathological laboratory was opened. In 1889 the Johns Hopkins Hospital was opened, and the physician, surgeon, and gynecologist-in-chief to the hospital were appointed to the professorships respectively of medicine, surgery, and gynecology and obstetrics. At the same time the professor of psychiatry was appointed. Opportunities for instruction were afforded to graduates in medicine. Ampler endowment, however, was needed to complete the organization of a medical department.

Gifts amounting to $111,731.68, most of which were offered to this University in October, 1890, by a committee of women, and an additional gift of $306,977, offered to the University in December, 1892, in addition to her previous subscriptions, by Miss Mary Elizabeth Garrett, made up, with other available resources, the amount of $500,000, which had been agreed upon by the Trustees as the minimum sum to be secured for the opening of the Medical Department. These generous contributions were made upon condition that women be received upon the same terms as men.

This endowment, added to the available resources of the Johns Hopkins University and the Johns Hopkins Hospital, enabled the Trustees to complete the organization of the Medical Department and to open it for instruction in 1893.

II

THE WOMEN'S MEDICAL SCHOOL FUND

At a meeting of the Board of Trustees of the University, October 28, 1890, the following letter was presented:

"The committees formed for the purpose of raising a fund to procure the most advanced medical education for women, can now place at your disposal the sum of one hundred thousand dollars for the use of your medical school, if you will, by resolution, agree that women whose previous training has been equivalent to your preliminary medical course, shall be admitted to the school, when it shall open, upon the same terms which may be prescribed for men. There can be no doubt that women ought to be trained to act as nurses for sick women. There is as little doubt that a sufficient number of women ought to be educated and trained in such manner as to be fully able to care for sick women who may wish or ought to be treated by women. We have devoted ourselves to the furtherance of this object. We have reason to hope that a university which proposes to found a medical school intended to teach advanced methods in the treatment of those diseases which afflict mankind, will not refuse to women the opportunity of learning such methods. There is now a general interest in our movement. In order that this interest may be sustained we ask you to consider our offer at the earliest possible period.

NANCY MORRIS DAVIS,
Chairman of the Baltimore Committee."

The following minute was adopted by the Trustees:

The President and Board of Trustees of the Johns Hopkins University have received from Mrs. Nancy Morris Davis, chairman of one of the committees formed for the purpose of raising a fund to procure the most advanced medical education for women, the gratifying intelligence that $100,000 has been raised for the use of their intended Medical School, and is at their disposal, if they will, by resolution, agree to the terms upon which the money was contributed by its donors.

These terms are that this Board, if it accepts the funds thus raised, shall agree, by resolution, that, when its medical School shall be opened, women whose training has been equivalent to the preliminary medical course prescribed for men, shall be admitted to such school upon the same terms as may be prescribed for men.

The offer to this University of the particular fund is the free voluntary act of women residing in this State and in other states, made without the suggestion or solicitation of this Board, and we accept it under and subject to the terms which are made a part of the gift, with the understanding and declaration, however, that such preliminary training in all its parts shall be obtained in some other institution of learning devoted, in whole or in part, to the education of women, or by private tuition.

The fund so contributed shall be invested and known as "The Women's Medical School Fund," and that fund, and all interest to accrue thereon, and all additions made thereto for the same purpose, shall remain invested for the purposes of increase only until, with its aid as a foundation, a general fund has been accumulated amounting to not less than $500,000, and sufficient for the establishment and maintenance of a Medical School worthy of the reputation of this University and fully sufficient as a means of complete medical instruction. Then, and not until then, will a Medical School be opened by this University; and then, and not until then, will the gift now offered be used by this University; and then, and not until then, will the terms attached thereto be operative.

The utility of a training school for women nurses has been demonstrated by the experience and practice of the Johns Hopkins Hospital, and by the necessities of home life among our people.

This Board is satisfied that in hospital practice among women, in penal institutions in which women are prisoners, in charitable institutions in which women are cared for, and in private life, when women are to be attended, there is a need and place for learned and capable women physicians; and that it is the business and duty of this Board, when it is supplied with the necessary means for opening its proposed Medical School, to make provision for the training and full qualification of such women for the abundant work which awaits them in these wide fields of usefulness.

Nothing contained in this minute shall be construed as abridging, in any manner, the right of the Board of Trustees of the Johns Hopkins University to make such rules and regulations as they may deem necessary for the government of its School of Medicine, when it is organized; and in making such rules and regulations, the terms of this minute shall always be respected and observed.

III

THE MARY ELIZABETH GARRETT FUND *

TERMS OF THE GIFT, AS ACCEPTED BY THE TRUSTEES, FEBRUARY 21, 1893.

Miss Mary Elizabeth Garrett, in order to make up the sum of $500,000, which the Board of Trustees required should be secured as an endowment before the Medical School of the University was opened, has contributed to that fund the sum of $306,977 upon the following terms, which have been agreed to by the University:

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* So designated by the Trustees, December 24, 1892.

1. That women shall enjoy all the advantages of the Medical School of the Johns Hopkins University on the same terms as men, and shall be admitted on the same terms as men to all prizes, dignities or honors that are awarded by competition, examination or regarded as rewards of merit.

2. That not more than $50,000 of the original endowment of $500,000 shall be expended on a building or buildings; and that in memory of the contributions of the Committees of the Women's Medical School Fund, this building, if there be but one, or the chief building, if there be more than one, shall be known as the Women's Fund Memorial Building.

3. That the Medical School of the University shall be exclusively a graduate school as hereinafter explained, that is to say: That the Medical School of the Johns Hopkins University shall form an integral part of the Johns Hopkins University, and like other departments of the University, shall be under the management and control of the Trustees of the said University; that it shall provide a four years' course, leading to the degree of Doctor of Medicine; that there shall be admitted to the School those students only who by examination or by other tests equally satisfactory to the Faculty of the Medical School (no distinction being made in these tests or examinations between men and women), have proved that they have completed the studies included in the Preliminary Medical Course (Group Three, Chemical-Biological Course) as laid down in the University Register (but this condition is not meant to restrict the Trustees from receiving as hearers, but not as candidates for the degree of Doctor of Medicine, those who have received the degree of Doctor of Medicine, or its equivalent, in some school of good repute); and that the degree of Doctor of Medicine of the Johns Hopkins University shall be given to no Doctors of Medicine who have not proved by examination or by other tests equally satisfactory to the Faculty of the Medical School that they have completed the studies included in the Preliminary Course, besides completing the course of instruction of the Medical School of the Johns Hopkins University.

The aforegoing provisions shall not be construed as restricting the liberty of the University to make such changes in the requirements for the admission to the Medical School of the Johns Hopkins University or to accept such equivalents for the studies required for admission to this school as shall not lower the standard of admission specified in this clause: provided that the requirements in modern languages other than English shall not be diminished, and provided also that the requirements in non-medical scientific studies shall include at least as much knowledge of natural science as is imparted in the three minor courses in science now laid down in its university register, the subjects and arrangements of these scientific studies being subject to such modifications as may from time to time seem wise to its Board and to the Faculty of the Medical School, but being at all times the same for all candidates for admisssion. (For such requirements always see University Register.)

4. That the terms of this gift and the Resolutions of October 28th, 1890, by which the Trustees accepted the gift of the Woman's Medical School Fund, shall be printed each year in whatever annual calendars may be issued announcing the courses of the Medical School.—See appended Resolutions.

5. That there shall be created a committee of six women to whom the women studying in the Medical School may apply for advice concerning lodging and other practical matters, and that all questions concerning the personal character of women applying for admission to the School, and all non-academic questions of discipline affecting the women studying in the Medical School shall be referred to this committee, and by them be in writing reported for action to the authorities of the University; that the members of this committee shall be members for life; that the committee, when once formed, shall be self-nominating, its nominations of new members to fill such vacancies as may occur being subject always to the approval of the Board of Trustees of the University.

6. That in the event of any violation of any or all of the aforesaid stipulations, the said sum of $306,977 shall revert to her, or such person or persons, institution or institutions, as she by testament or otherwise may hereafter appoint.

It will be observed that by the tenor of the aforegoing terms no university course will be in any way modified by any conditions attached to her gift. Those conditions relate exclusively to preparation for the Medical School, and have received, in the shape in which they are now presented, the unanimous approval of the Medical Faculty of the University.

The terms of admission to the Medical School of the University as formulated and interpreted by the Medical Faculty of the University, February 4, 1893, and here subjoined, are therefore in entire accordance with the terms of her gift.

(Signed) MARY E. GARRETT.

REQUIREMENTS FOR ADMISSION TO THE MEDICAL SCHOOL OF THE JOHNS HOPKINS UNIVERSITY, UNANIMOUSLY APPROVED BY THE MEDICAL FACULTY, FEBRUARY 4, 1893.

A course of four years' instruction will be provided leading to the degree of Doctor of Medicine.

To this course there will be admitted as candidates for the degree:

1. Those who have satisfactorily completed the Chemical-Biological Course which leads to the A. B. Degree in this University.

2. Graduates of approved Colleges or Scientific Schools who can furnish evidence: (*a*) That they have a good reading knowledge of French and German; (*b*) That they have such knowledge of Physics, Chemistry and

Biology as is imparted by the regular Minor Courses given in these subjects in this University.

3. Those who give evidence by examination that they possess the general education implied by a degree in arts or in science from an approved College or Scientific School, and the knowledge of French, German, Physics, Chemistry and Biology, already indicated.

By approved Colleges and Scientific Schools are meant those whose standard for graduation shall be considered by this University as essentially equivalent to its standard for graduation in the undergraduate department.

It is to be understood that at least one year's study in the Chemical and Biological Sciences in their immediate relations to medicine shall be required from students after their entrance to the medical school.

WOMEN'S COMMITTEE OF THE MEDICAL SCHOOL.

MRS. HENRY M. HURD,
MRS. IRA REMSEN,
MRS. HOWARD A. KELLY,
MISS M. CAREY THOMAS,
MISS MARY M. GWINN,
MISS MARY E. GARRETT.

Their duties are stated in paragraph 5 of the letter printed above.

PART II

CATALOGUE AND ANNOUNCEMENT OF THE SPECIAL COURSES OF INSTRUCTION FOR GRADUATES IN MEDICINE

PHYSICIANS ATTENDING SPECIAL COURSES

1896-97

Amos, Sheldon University College, London; London Medical School for Women.	Baltimore	*Special Research*
Athey, Caleb Noble M. D., University of Maryland, 1894.	Baltimore	*Pathology*
Baird, William J. M. D., University of Maryland, 1881.	Boulder, Colo.	*Pathol., Bacteriol., and Clinical Microscopy*
Buck, Jeffries M. D., University of Pennsylvania, 1895.	Baltimore	*Clinical Microscopy*
Buckler, Thomas H. A. B., Johns Hopkins, 1886; M. D., Univ. of Maryland, 1888.	Baltimore	*Clinical Microscopy*
Burke, Marion M. D., Woman's Medical College (N. Y.), 1895.	New York City	*Med., and Clinical Microscopy*
Carr, Albert G. M. D., Bellevue Hospital Medical College, 1870.	Durham, N. C.	*Medicine and Surgery*
Carter, William F. M. D., University of Virginia, 1872.	U. S. Army	*Bacteriol. and Clinical Microscopy*
Comstock, George F. M. D., College of Physicians and Surgeons (N. Y.), 1883.	Saratoga Springs, N.Y.	*Med., Surg., Gynecol., Spec. Depts., and Clinical Micro.*
Cone, Claribel M. D., Woman's Medical College (Balt.), 1890.	Baltimore	*Special Research*
Dobyns, Frederick M. D., University of Maryland, 1897.	Baltimore	*Pathology and Bacteriology*
Dryer, John L. M. D., Cincinnati College of Medicine and Surgery, 1877.	Santa Ana, Cal.	*Gynecology*
Duggan, James Henry M. D., Southern Medical College (Ga.), 1884.	Stevensville, Ga.	*Medicine and Gynecology*
Ewing, William B. M. D., Western University of Pennsylvania, 1896.	Pittsburg, Pa.	*Special Research*
Fearn, Thomas M. D., University of Maryland, 1890.	Mobile, Ala.	*Clinical Microscopy*
Fitzhugh, Henry M., Jr. M. D., University of Maryland, 1897.	Baltimore	*Clinical Microscopy*
Foutz, Charles R. M. D., University of Maryland, 1897.	Westminster	*Clinical Microscopy*
George, William H. M. D., Albany Medical College, 1894.	Albany, N. Y.	*Med., Surg., Gynecol., Pathol., and Clinical Microscopy*

Gillespie, Paul M. D., Miami Medical College, 1897.	Cincinnati, O.	*Pathol., and Clinical Microscopy*
Grimes, Samuel B. M. D., University of Maryland, 1897.	Baltimore	*Clinical Microscopy*
Hamilton, Alice M. D., University of Michigan, 1893.	Fort Wayne, Ind.	*Special Research*
Hamlin, William E. M. D., Baltimore Medical College, 1897.	Waltham, Mass.	*General Medicine*
Harris, Lurty N. M. D., University of Maryland, 1897.	Harrisonburg, Va.	*Pathology*
Harris, Norman MacL. M. B., University of Toronto, 1894.	Toronto, Ont.	*Bacteriology*
Head, George Douglas M. D., University of Maryland, 1895.	Minneapolis, Minn.	*General Medicine and Clinical Microscopy*
Heartz, Jane L. M. D., Woman's Medical College (N. Y.), 1893.	Chicago, Ill.	*Medicine and Clinical Microscopy*
Herring, Arthur P. M. D., Baltimore Medical College, 1895.	Baltimore	*Pathology*
Jenkins, G. Chapin M. D., Hahnemann Medical College (Phila.), 1896.	Germantown, Pa.	*Medicine and Pathology*
Kelly, William D. M. D., Jefferson Medical College, 1887.	St. Paul, Minn.	*Gynecol., Pathol., and Clinical Microscopy*
Kirby, Francis J. M. D., University of Maryland, 1892.	Baltimore	*Anat., Bacteriol., Physiol. Chemistry*
Korndörfer, Augustus, Jr. M. D., Hahnemann Medical College (Phila.), 1896.	Philadelphia, Pa.	*Special Research*
Kramps, Alonzo F. M. D., Rush Medical College, 1895.	Chicago, Ill.	*Pathol., Bacteriol., and Clinical Microscopy*
Lambach, Frederick M. D., University of Pennsylvania, 1887.	Le Claire, Iowa	*Gynecol., Pathol., Bacteriol., and Clinical Microscopy*
Latimer, Caroline W. M. D., Woman's Medical College (Balt.), 1890; A. B. and A. M., Bryn Mawr College, 1896.	Howard County	*Special Research*
Lavender, William R. M. D., Omaha Medical College, 1890.	Omaha, Neb.	*Pathol., Bacteriol., and Clinical Microscopy*
Lawrason, L. M. B., University of Toronto, 1895.	Dundas, Ont.	*Med., Surg., and Gynecol.*
Lecrone, Harris R. M. D., Jefferson Medical College, 1885.	York, Pa.	*Pathol., Bacteriol., and Clin. Micro.*
Lynch, John C. M. D., New York University, 1886.	Bridgeport, Conn.	*Med., Surg., Gynecol., Spec. Depts., Pathol., and Clinical Microscopy*
Manning, John M. M. D., Bellevue Hospital Medical College, 1882.	Durham, N. C.	*General Medicine and Surg.*
Mathews, William M. D., University of Maryland, 1897.	Philadelphia, Pa.	*Bacteriology*
Merritt, Louis A. M. D., Bowdoin Medical College, 1893.	Pittsfield, Me.	*Gynecology*

Miller, William G.	New Castle, Pa.	*Bacteriol., and Clinical Micro.*
Murray, F. Alan G. M. D., University of Maryland, 1897.	Lee, Mass.	*Clinical Microscopy*
Neale, Leonard E. M. D., University of Maryland, 1881.	Baltimore	*Bacteriology*
Paton, Stewart M. D., College of Physicians and Surgeons (N. Y.), 1889.	Baltimore	*Special Research*
Patterson, Edward L. M. D., Georgia Medical College, 1887.	Barnwell, S. C.	*Med., Surg., Gynecol., Special Depts., and Clinical Micro.*
Penning, Oliver P. M. D., University of Maryland, 1897.	Havre de Grace	*Clinical Microscopy*
Potter, Charles H. M. D., Baltimore Medical College, 1898.	Cleveland, O.	*Special Research*
Purdy, Harry L. M. D., College of Physicians and Surgeons (N. Y.), 1890.	New York, N. Y.	*Surgery and Gynecology*
Roberts, John B. M. D., Jefferson Medical College, 1874, and University of Pennsylvania, 1888.	Philadelphia, Pa.	*Pathology and Bacteriology*
Roger, Francis L. M. D., Baltimore Medical College, 1895.	Baltimore	*Pathol., Bacteriol., and Clin. Micro.*
Roman, Victor M. M. D., Hahnemann Medical College, 1896.	Philadelphia, Pa.	*Medicine and Pathology*
Sawyer, John W. M. D., Bowdoin Medical College, 1894.	Monmouth, Me.	*Gynecology*
Schwatka, John B. M. D., University of Maryland, 1882.	Baltimore	*Pathology*
Scott, Charles L. M. D., University of Maryland, 1897.	Sanford, N. C.	*Bacteriology*
Senkler, George E. M. D., University of Minnesota, 1892, and University of Pennsylvania, 1893.	St. Paul, Minn.	*Med., Pathol., and Clin. Micro.*
Smith, William S. M. D., University of Maryland, 1883.	Baltimore	*Gynecology*
Steenken, Charles D. A. B., Johns Hopkins University, 1892; M. D., College of Physicians and Surgeons (N. Y.), 1896.	Baltimore	*Med., Surg., Gynecol., and Spec. Depts.*
Stover, George H. M. D., University of Denver, 1893.	Denver, Colo.	*Med., Pathol., and Clin. Micro.*
Thieme, Gustav C. M. D., College of Physicians and Surgeons (Balt.), 1896.	Baltimore	*Surgery*
Thomayan, H. H. M. D., College of Physicians and Surgeons (Balt.), 1897.	Asia Minor	*Bacteriol., and Clinical Microscopy*
Thompson, Amos W. M. D., New York University, 1887.	Saratoga Springs, N. Y.	*Med., Surg., Gynecol., Spec. Depts., and Clin. Micro.*
Tolman, Julia M. D., University of Michigan, 1884.	Arlington, Mass.	*Medicine and Diseases of Nervous System*
Tupper, V. L. M. D., Jefferson Medical College, 1896.	Bay City, Mich.	*Medicine*

Walker, Miles J. **M. D., Louisville Medical College, 1879.**	Yorkville, S. C.	*Bacteriol., and Clinical Micro.*
Wegefarth, Arthur **M. D., Baltimore Medical College, 1890.**	Baltimore	*General Medicine*
Wilkinson, H. B. **M. D., University of Virginia, 1894.**	Tuscaloosa, Ala.	*Med., Gynecol., Bacteriol., and Clin. Micro.*
Wilson, Cunningham **M. D., University of Pennsylvania, 1884.**	Birmingham, Ala.	*Special Research*
Wilson, Pierre **M. D., Missouri Medical College, 1884.**	Denison, Texas	*Pathol., Bacteriol., and Clinical Microscopy*

(69)

SPECIAL COURSES FOR GRADUATES IN MEDICINE

GENERAL INFORMATION

Since the opening of the Johns Hopkins Hospital in 1889, courses of instruction have been offered to graduates in medicine. The attendance upon these courses has steadily increased and indicates gratifying appreciation of the special advantages here afforded. These special courses of instruction for graduates in medicine are given annually during the months of May and June. During April there is a preliminary course in Normal Histology and Microscopic Anatomy.

These courses are in Pathology, Bacteriology, Clinical Microscopy, General Medicine, Surgery, Gynecology, Dermatology, Diseases of Children, Diseases of the Nervous System, Genito-Urinary Diseases, Laryngology and Rhinology, and Ophthalmology and Otology. The instruction is intended to meet the requirements of practitioners of medicine, and is almost wholly of a practical character. It includes laboratory courses, demonstrations, bedside teaching, and clinical instruction in the wards, dispensary, amphitheatre, and operating rooms of the Hospital.

These courses are open to those who have taken a medical degree and who give evidence satisfactory to the several instructors that they are prepared to profit by the opportunities here offered. The number of students who can be accommodated in some of the practical courses is necessarily limited. For these the places are assigned according to the date of application.

The clinical instruction is given in the wards of the Johns Hopkins Hospital, in the Dispensary, and in the Operating Rooms and Amphitheatre. These afford an abundance of clinical material.

The Pathological and the Clinical Laboratories are on the grounds of the Hospital, and are well arranged and equipped for their special purposes. The opportunities are thus convenient for combining clinical work with studies in the Pathological, Bacteriological, and Clinical Laboratories.

In the main building of the Hospital is a Medical Library with sets of medical periodicals. The various special laboratories possess also appropriate libraries. These, as well as the libraries of the Peabody Institute and of the Medical and Chirurgical Faculty, are available for the use of medical students. The proximity of Washington permits the ready consultation of books in the Library of the Surgeon General's Office and the examination of the valuable specimens in the Army Medical Museum.

Three associations—the Hospital Medical Society, the Historical Club and the Journal Club—meet in the Assembly Room of the Hospital, one on each Monday evening from October to June.

The Johns Hopkins Hospital Bulletin, issued monthly, and the Johns Hopkins Hospital Reports contain the proceedings of the Hospital Societies, articles by the Hospital staff, and the results of researches conducted in the Hospital and the laboratories.

REGULATIONS REGARDING MICROSCOPES FOR GRADUATE COURSES

Those who take the practical graduate courses requiring the use of a microscope (Pathology, Bacteriology, and Clinical Microscopy) must provide their own microscopes, as the laboratories do not supply microscopes for the graduate courses. The microscopical outfit should include an oil-immersion objective and a sub-stage illuminating apparatus.

STATEMENTS AS TO THE COURSES OF INSTRUCTION FOR GRADUATES IN MEDICINE

1. NORMAL HISTOLOGY AND MICROSCOPIC ANATOMY

For those who may not be adequately prepared to follow the laboratory courses in Pathology, Bacteriology and Clinical Microscopy, a special preliminary course in Normal Histology and Microscopic Anatomy is given during the month of April.

2. PATHOLOGY AND BACTERIOLOGY

Instruction in these subjects is under the direction of Dr. William H. Welch, Professor of Pathology, Johns Hopkins University, and Pathologist to the Johns Hopkins Hospital, Dr. Simon Flexner, Associate Professor of Pathology and Resident Pathologist to the Hospital, Dr. Louis E. Livingood, Associate in Pathology, and Dr. Norman MacL. Harris, Assistant in Bacteriology.

The instruction is given in the Pathological and Clinical Laboratories of the Johns Hopkins University and Hospital. The courses are open to physicians, medical students, and advanced students in biology, who have had the requisite training in normal histology.

I. PATHOLOGY.

The course in Pathology for physicians is conducted separately from that for candidates for the degree of Doctor of Medicine. The physicians' course begins on the first of May and continues on three afternoons of the week for two months. This course embraces pathological histology, the demonstration of fresh pathological specimens, and the technique of post-mortem examinations. A useful collection of museum specimens also is employed in demonstrating gross lesions.

The course begins with the study of inflammation and takes up in regular order the pathological histology of the different organs and tissues of the body, including the pathology of tumors. Microscopic sections are given to be stained, mounted, and carefully studied.

Frequent opportunities are afforded to witness the post-mortem examinations made in the autopsy theatre, which is a part of the Pathological Laboratory.

II. BACTERIOLOGY.

The course in bacteriology for physicians, limited to thirty students, begins the first of May and continues for six weeks. The bacteriological course consists in practical work in the bacteriological laboratory, which occupies rooms in the pathological building. The student is taught the preparation of culture media, the principles of disinfection and sterilization, methods of cultivating, staining, and studying bacteria, the biological examination of water, air, and soil, and familiarity with the important bacterial species, particularly those of a pathogenic nature. This department is fully supplied with the requisite apparatus and cultures for bacteriological work.

III. LECTURES.

A course of lectures on selected subjects relating to Infection and Immunity is given by Dr. Welch. Dr. Flexner lectures upon selected topics in Pathology.

IV. ADVANCED AND SPECIAL WORK.

Opportunity is provided for advanced work and special research in Pathological Histology, Experimental Pathology, and Bacteriology for those fitted to undertake it. Special workers are received at any time during the academic year (October to June).

The laboratory is equipped with abundant material for investigations in pathological histology, with the necessary apparatus for work in experimental pathology, and with cultures and facilities for bacteriological research. There is a sufficient supply of fresh material from the wards of the Hospital and from the post-mortem examinations. Special subjects for research will be assigned to those who wish and are prepared to undertake original investigation.

3. CLINICAL MICROSCOPY

This subject, which is under the general supervision of the department of medicine, is taught by Dr. T. B. Futcher, Associate in Medicine, Dr. J. W. Lazear, Assistant in Clinical Microscopy, and assistant demonstrators.

The course consists in practical work in the Clinical Laboratory on two afternoons a week during May and June. The various methods of examining blood, sputum, secretions, excretions, and in general the applications of the microscope to diagnosis and other aspects of clinical medicine, will be taught practically.

4. MEDICINE

Instruction in Medicine is given under the direction of Dr. William Osler, Professor of Medicine in the Johns Hopkins University and Physician-in-Chief to the Hospital, with whom are associated Dr. W. D. Booker, Clinical Professor of Pediatrics, Dr. H. M. Thomas, Clinical Professor of Neurology, Dr. W. S. Thayer, Associate Professor of Medicine, Dr. T. B. Futcher, Associate in Medicine, and Drs. Frank R. Smith and H. B. Jacobs, Instructors in Medicine.

I. WARD-WORK.

A class of not more than twenty-five is taken into the wards on three mornings in the week at nine o'clock. The members see the new cases examined, have opportunity themselves personally to examine patients, and especially to obtain proficiency in physical diagnosis.

II. Dispensary.

Opportunities are afforded to see cases in the medical dispensary.

III. Clinics.

Dr. Osler or Dr. Thayer gives a weekly clinic in the amphitheatre upon cases or groups of cases illustrating points in diagnosis or treatment of general diseases.

5. SURGERY

Instruction in Surgery, under the direction of Dr. W. S. Halsted, Professor of Surgery, Johns Hopkins University, and Surgeon-in-Chief to the Johns Hopkins Hospital, with whom are associated Dr. J. M. T. Finney, Associate Professor of Surgery, Dr. J. C. Bloodgood, Associate in Surgery, Dr. Hugh H. Young, Instructor in Genito-Urinary Diseases and Dr. Harvey W. Cushing, Assistant in Surgery and Resident Surgeon to the Hospital, is as follows:

I. Wards.

Bedside teaching in general surgery is given by Dr. Halsted, or the Resident Surgeon, once each week.

II. Private Operating Room.

Operations are performed at 10 A. M., to which a limited number of students are admitted.

III. Dispensary.

Opportunities are afforded here to see cases in minor surgery. Clinics or class-room demonstrations are given by Dr. J. M. T. Finney, Associate Professor of Surgery.

IV. Clinics.

Dr. Halsted or Dr. Finney gives a weekly clinic in the amphitheatre.

6. GYNECOLOGY

Instruction in Gynecology, under the direction of Dr. H. A. Kelly, Professor of Gynecology and Obstetrics in the Johns Hopkins University and Gynecologist-in-Chief and Obstetrician to the Hospital, aided by Dr. W. W. Russell and Dr. T. S. Cullen, Associates in Gynecology, and the Resident Gynecologist of the Hospital, is given according to the following plan:

I. PRIVATE OPERATING ROOM.—The privileges of this room to see operations by Drs. Kelly and Russell are extended to a limited number of physicians. Operations are performed four times weekly at 9.30 A. M.

II. WARDS.—Instruction is given twice weekly in the wards upon the after-treatment of cases which have been operated upon.

III. CLINICS.—Other cases admitted to the wards for treatment and operation are used for purposes of instruction, either in the weekly clinics or at the bedside.

IV. GYNECOLOGICAL DIAGNOSIS.—This work consists of the examination, under anæsthesia, of cases referred from the gynecological dispensary. Many of these cases are subsequently operated upon before the class.

7. SPECIAL DEPARTMENTS OF PRACTICAL MEDICINE AND SURGERY

I. DERMATOLOGY.—Clinics and class-room demonstrations are given by Dr. J. Williams Lord or Dr. T. Caspar Gilchrist, Associates in Dermatology in the Johns Hopkins University and Dermatologists to the Hospital.

II. DISEASES OF CHILDREN.—Clinics and class-room demonstrations are given by Dr. William D. Booker, Clinical Professor of Pediatrics.

III. Diseases of the Nervous System.—Clinics and class-room demonstrations are given by Dr. Henry M. Thomas, Clinical Professor of Neurology.

IV. Genito-Urinary Diseases.—Clinics and class-room demonstrations are given by Dr. Hugh H. Young, Instructor in Genito-Urinary Diseases.

V. Laryngology and Rhinology.—Clinics and class-room demonstrations are given by Dr. John N. Mackenzie, Clinical Professor of Laryngology and Laryngologist to the Hospital, or by his assistants.

VI. Ophthalmology and Otology.—Clinics and class-room demonstrations are given by Dr. Samuel Theobald, Clinical Professor of Ophthalmology and Otology and Ophthalmic and Aural Surgeon to the Hospital, and by Dr. Robert L. Randolph, Associate in Ophthalmology and Otology and Assistant Ophthalmic and Aural Surgeon to the Hospital.

FEES FOR GRADUATE COURSES

Graduates of medical colleges may be admitted to all the courses in Medicine, Surgery, Gynecology, and Special Departments of Practical Medicine and Surgery for the sum of $100 (not including the Laboratory Courses in Pathology, Bacteriology, and Clinical Microscopy), and to single courses on the payment of the fees below named:—

Medicine,	$25
Surgery,	25
Gynecology,	25
Each of the Special Departments of Practical Medicine and Surgery,	25
Clinical Microscopy,	25
Pathological Histology (including post-mortem examinations and pathological demonstrations),	25
Bacteriology,	25
Advanced and Special Work,	25
Preliminary Course in Normal Histology,	25

In the Pathological, Bacteriological, and Clinical Laboratories special charges are made for breakage and for damage to apparatus. A deposit of ten dollars as caution money is required, which is returned when the student leaves, if there are no charges against him.

Before entering upon any course of instruction in the Medical School, the student must obtain from the Dean of the Medical School, or his representative, a card certifying that he is qualified to follow the desired course. This card must be presented at the Treasurer's office of the University on North Howard Street, where the fees must be paid before permission is granted to attend.

INDEX

PAGE
Admission, Requirements for.... 29
    to advanced standing.... 31
Advisory Board of Medical School.... 14
Anatomy, Instruction in.... 37
    Microscopic.... 39
Appointments to Hospital Staff.... 67
Assistants.... 12
Associate Professors.... 9
Associates.... 10
Autopsies.... 46
Bacteriology, Instruction in, for Matriculates.... 47
    for Physicians.... 84
Bay View Asylum, Clinical Instruction in.... 59
    Appointments to House Staff of.... 67
Biology, Preparation in.... 29
Breakage, Charges for....68, 89
Bulletin of Johns Hopkins Hospital.... 36
Calendar.... 6
Catalogue of Candidates for degree of M. D.... 19
    of Doctors of Medicine.... 27
    of Physicians attending Special Courses.... 77
Caution Money....68, 89
Certificates for Admission.... 30
Chemistry, Preparation in.... 29
    Physiological, Instruction in.... 42
Children, Diseases of, Instruction in, for Matriculates.... 56
    for Physicians.... 87
Clinical Clerks.... 50
    Microscopy, Instruction in, for Matriculates.... 49
        for Physicians.... 85
    Opportunities.... 35
    Professors.... 9
Commencement.... 68
Committees of Faculty.... 15
Conditions.... 66
Courses of Instruction for Matriculates.... 37
    for Physicians.... 83
    Programme of.... 62

PAGE

Dean 7
Degree in Arts or Science, Preliminary Requirement concerning 29
Degree of Doctor of Medicine, Requirements for 67
Dermatology, Instruction in, for Matriculates 55
  for Physicians 87
Dietetics, Instruction in 46
Diseases of Children, Instruction in, for Matriculates 56
  for Physicians 87
Diseases of the Nervous System, Instruction in, for Matriculates 56
  for Physicians 88
Dissections 38
Dispensary Instruction 55
Ear, Diseases of, see Otology
Embryology 37, 41
Endowment 69
Examinations, Annual 66
  for Admission 30
Eye, Diseases of, see Ophthalmology
Faculty of Medicine 7
Fees, Tuition 68, 89
Forensic Medicine, Instruction in 60
French, Preparation in 29
Garrett, Mary Elizabeth, Fund 71
Genito-Urinary Diseases, Instruction in, for Matriculates 57
  for Physicians 88
German, Preparation in 29
Graduate Courses 75
Graduation, Requirements for 67
Gynecology, Instruction in, for Matriculates 54
  for Physicians 87
Histology, Instruction in, for Matriculates 38
  for Physicians 83
Historical Club 36, 60
History of Medicine, Instruction in 60
Hospital, see Johns Hopkins Hospital
Hygiene, Instruction in 59
Instruction, Courses of 37, 83
  General Plan of 31
  General Statement 28, 81
Instructors 12
Johns Hopkins Hospital, Appointments to House Staff of 67
  Clinical Opportunities of 35
  Bulletin of 36
  Reports of 36
Laboratories 33

PAGE
Laryngology, Instruction in, for Matriculates.... 58
for Physicians.... 88
Latin, Preparation in.... 29
Lecturers.... 10
Legal Medicine, see Forensic Medicine
Libraries.... 36
Matriculation.... 29
Medical Societies.... 36
Medicine, Instruction in, for Matriculates.... 48
for Physicians.... 85
Mental Diseases, see Psychiatry
Microscopes, Regulations regarding....35, 68, 82
Microscopic Anatomy....39, 83
Microscopy, Clinical, see Clinical Microscopy
Nervous System, see Neurology
Neurology, Instruction in.... 39
Clinical, Instruction in, for Matriculates.... 56
for Physicians.... 88
Nose, Diseases of, see Rhinology
Obstetrics, Instruction in.... 53
Ophthalmology, Instruction in, for Matriculates.... 58
for Physicians.... 88
Organology, Instruction in.... 39
Otology, Instruction in, for Matriculates.... 58
for Physicians.... 88
Pathology, Instruction in, for Matriculates.... 46
for Physicians.... 83
Pediatrics, see Diseases of Children
Pharmacology, Instruction in....43, 45
Pharmacy, Instruction in.... 45
Physical Diagnosis, Instruction in.... 48
Physicians attending Special Courses.... 77
Physics, Preparation in.... 29
Physiological Chemistry, Instruction in.... 42
Physiology, Instruction in.... 41
President.... 7
Professors.... 7
Programme of Courses.... 62
Psychiatry, Instruction in.... 59
Publications.... 36
Reports of the Johns Hopkins Hospital.... 36
Requirements for Admission, see Admission
for Graduation.... 67
Rhinology, Instruction in, for Matriculates.... 58
for Physicians.... 88

PAGE
Science, Requirements for Admission........ 29
Skin, Diseases of, see Dermatology
Special Courses for Graduates........ 83
  Departments, Instruction in........55, 87
  Lectures........ 61
  Workers, Admission of........ 31
Societies, Medical........ 36
Students, Catalogue of........ 19
Surgery, Instruction in, for Matriculates........ 51
  for Physicians........ 86
Surgical Dressers........ 52
Therapeutics, Instruction in........ 45
Throat, Diseases of, see Laryngology
Toxicology, Instruction in........ 44
Trustees of the Hospital........ 5
  of the University........ 5
Tuition Fees........68, 89
Ward Work........32, 50, 52, 55
Women, Admission of........28, 70
Women's Committee of the Medical School........ 74
Women's Fund Memorial Building........33, 72
Women's Medical School Fund........ 70
Zoology, Medical, Instruction in........ 60

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